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ILLUSTRATION BY

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VOL. XIII.

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No. 17

TRANSFORMATION OF A BUFFALO LANDMARK.

From Our Own Correspondent.

BUFFALO, Oct. 16.—One of the few remaining historic residences of Buffalo is now in the hands of contractors engaged in transforming it into office quarters for the E. R. Thomas Motor

historic building in the city. It was erected in 1816 by General Peter B. Porter on the strip of land between Niagara street and the Niagara River, a short distance below Ferry street, and is to-day not the oldest

the vicinity. Passing into the hands of Lewis F. Allen, the house continued for many years to be one of distinguished hospitality. Mr. Allen's guests included Henry Clay, Daniel Webster, General Scott, Gen-



HISTORIC OLD MANSION IN BUFFALO, BUILT BY GENERAL PORTER, NOW REMODELED INTO OFFICE FOR THOMAS MOTOR COMPANY.

Company, which is also building one of the largest motor factories in this part of the country.

The old residence is known as the Porter House, and historians have classed it as the most storied in associations of all places on the Niagara River front, and the most

house in Buffalo, but the best preserved of its age.

General Porter occupied it until 1836, entertaining among his guests General Lafayette, John Quincy Adams, DeWitt Clinton and other distinguished men, including Red Jacket and every prominent Indian of

eral McComb and others equally famous; and a member of his household for a time was his nephew, Grover Cleveland, Buffalo's second president of the United States.

The house has been shorn of its beauty and surrounding estate, first by the construction of the Erie Canal, then of the

railroads, and later by the sale of land and the construction of buildings.

The modern factory which the Thomas company is building obstructs the historic mansion from view on the front side, the buildings completely surrounding it except on the bank overlooking the river. The house will have little of its original appearance when the work of transforming it into an office is completed. The roof has been covered with sheet metal, it is being given a coat of elaborate paint, and is being otherwise changed, both inside and out.

To commemorate the structure's historic associations, the Niagara Frontier Landmarks Association will soon place a bronze tablet in a conspicuous place, either just inside the entrance or on the outside front wall, marking it and recalling some of the incidents connected with it.

It is interesting to note that the Porter House is just two blocks south of the scene of the heavy fighting of the first battle of Black Rock in the War of 1812. Colonel Bishop was mortally wounded in the fight when the British were driven from the vicinity and evacuated the Porter House, of which they had taken possession.

General Porter, who built the old house, was Secretary of War under President John Quincy Adams. He was also a member of Congress, during which time he was on the committee on foreign affairs.

A Bee Up His Sleeve.

"Ever get a bee up your sleeve when driving an automobile?" asked a suburbanite, who has abandoned railroad travel for the pleasure of coming to his office in his motor car every morning. "Well, I did the other day, and I tell you it took nerve to keep my hand on the wheel long enough to bring the machine to a stop, while all the time that bee was working away on my arm worse than the biggest Jersey mosquito. I was moving along at a pretty good pace just above New Rochelle, when the current of air raised by my machine evidently caught this early bee just at the right angle to waft him halfway up my sleeve. He didn't like it a bit, and neither did I, but that bee gave me the hottest fifteen seconds I have ever experienced in an automobile.—*New York Times*.

Four large automobiles were purchased here yesterday by R. H. Boyd, president of the Penny Savings Bank of Nashville, Tenn., for use in a new street line there for negroes. A company, recently incorporated there as the Union Transport Company, with a capital of \$25,000, is organized and owned by negroes, and will be run in the interest of negroes, in self-protection against the treatment which they receive on the street railways in the city, where they are permitted only to sit in certain separate seats, and where the conductors have power of police to remove them, even from those seats, if they see fit.—*New York Post*.

Denaturized Alcohol in Germany.

IN view of the increasing importance of alcohol as a fuel for internal combustion motors the following information regarding denaturized alcohol will doubtless be interesting to automobilists. The data is contained in a consular report furnished the United States Department of Commerce and Labor by Consul-General Mason, at Berlin.

The total output of alcohol in Germany for the year ending August, 1904, was 101,823,470 gallons, by far the greater part having been produced from potatoes. Comparatively small quantities of spirits distilled from grains, beet molasses, cherries, grape-must, plums and so on were used mainly for drinking and for the manufacture of medicines, perfumes, vinegar and other food preparations. It is the alcohol produced from potatoes, however, that is used for a vast number of industrial purposes, such as lighting, heating, and as a motor fuel. The consumption of alcohol in Germany for motor fuel has, however, decreased rather than increased during the past two years, not more than one per cent. of the total product, or 951,000 gallons, having been used for this purpose during the last year.

Alcohol is used duty free in Germany for industrial purposes after having been denaturized in the presence of a government official. The denaturization, which consists of mixing with the alcohol one or more of the substances prescribed by the very elaborate statutes covering the subject, may be "complete" or "incomplete," according to the purpose for which the spirit is to be used. Complete denaturization is accomplished by adding to every 100 liters (26 1-2 gallons) of alcohol 2 1-2 liters of "standard denaturizer" made of 4 parts of wood alcohol, 1 part of pyridin (a nitrogenous base obtained by distilling bone oil or coal tar), and 50 grains to each liter of oil of rosemary or lavender. A slightly different method consists of adding to every 100 liters of alcohol 1 1-4 liters of the "standard denaturizer" and two liters of benzol. During the year 1903-4 a total of 26,080,505 gallons of alcohol denaturized by these processes were used for heating, lighting and commercial purposes in Germany.

Incomplete denaturization is employed where the alcohol is to be used for special purposes for which the completely denaturized spirit would be unsuitable. The process is such as to render the spirit unfit for drinking, and varies according to the purpose for which the spirit is to be employed. For instance, for the manufacture of varnishes and inks, the alcohol is denaturized by the addition of oil of turpentine or of animal oil.

Alcohol for the manufacture of soda soaps is denaturized with castor oil. Denaturized alcohol is used in the manufacture of celluloid and pegamoid. Alcohol for the manufacture of ethers, aldehyde, argarcin, white

lead, bromo-silver gelatins, photographic papers and plates, electrode plates, collodion, salicylic acid and salts, aniline chemistry and a great number of other purposes is denaturized by the addition of sulphuric ether, benzol, oil of turpentine, or animal oil.

The quantity of incompletely denaturized alcohol used in Germany last year was 10,277,569 gallons. In addition to the completely and incompletely denaturized alcohol used for the purposes mentioned, 479,138 gallons of pure, undenaturized alcohol were used, duty free, for government or public purposes, such as government laboratories, hospitals, and for the manufacture of fulminates and smokeless powders.

The cost of producing alcohol in Germany varies with the locality, and also varies from year to year, in accordance with the yield and the consequent market price of the potatoes, grain and other alcohol-producing vegetables. In Prussia during the past year the price of fully denaturized spirits of 90 or 95 per cent. strength has ranged from a little more than 32 cents to 45 cents a gallon. During the two years of 1901-2 and 1902-3, when the potato crops were large, there was a great over-production, and the price fell to 15 and 17 cents a gallon—cost price, or even less. At the present cost of denaturized alcohol it is anything but an economical fuel for motor use in Germany. In Belgium there are two industries that owe their existence to the fact that denaturized alcohol is not taxed. These industries are the manufacture of ether and of artificial silk, these commodities requiring the annual use of 2,500,000 gallons of denaturized alcohol. Since 1906 the demand for alcohol has increased thirteenfold, the increase being due principally to the industries mentioned.

What Happened to Brown.

Dr. Gailey M. Brown was seriously injured in a peculiar automobile accident. He was working a crank to start the machinery when a heavy revolving wheel flew back against his face, knocking four front teeth loose, fracturing the upper jaw bone and rendering him senseless for several hours.—*Muskegon dispatch to Sault Ste. Marie News*.

Consul-General Guenther, of Frankfurt, Germany, reports that the transportation of benzine by rail in Germany is subject to certain restrictions on account of its inflammability. The owner of an automobile recently shipped his machine by rail from Munich, where he had taken part in the Herkomer races, to his home in Augsburg, but concealed the fact that the reservoir contained about 200 pounds of gasoline. For thus violating the railroad police regulations he was fined 10,000 marks (\$2,400).

A Ride Through Rock Creek National Park.

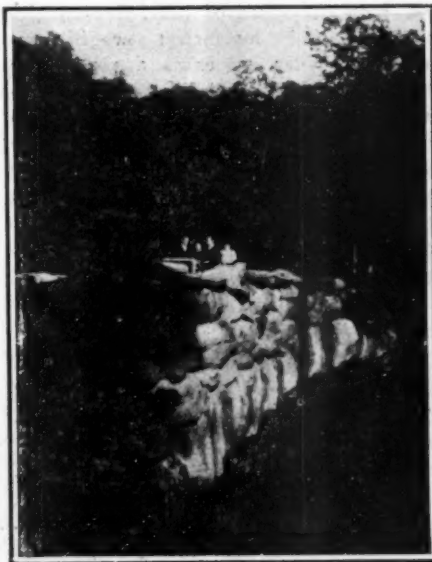
Special Correspondence.

WASHINGTON, D. C., Oct. 23.—The 1,700 automobilists who constitute Washington motordom will agree with a number of landscape painters of international reputation in the opinion that Rock Creek National Park is the most picturesque section in the neighborhood of the National Capital.

This fine public reservation of several thousand acres, with more than fifteen miles of smooth roadway, lies just on the northwestern edge of the city, stretching for several miles along both banks of a meandering stream from which it derives its name and affording fascinating vistas of attractively beautiful scenery. The landscape architects who laid out the drives, planned the bridges and located and designed the various animal houses for the "zoo," wisely preserved the wild, natural beauty of the heavily-wooded, rocky banks of the stream, so that there is a charming contrast as one turns immediately from the thickly built-up residential section of the city to the cool, fragrant depths of the little valley. So few are the evidences of the artificialities of man that this magnificent park, which the federal government has given to the city of Washington, and which is so very close to it, seems in no sense a part of the city; when one has descended into it, the spot seems remote and deliciously quiet.

There are a number of entrances, but two are particularly favored by automobilists. One is by way of Cincinnati street and into the Adams Mill road, which leads directly into the park. The other is a short distance west of Sixteenth street extended, which is Washington's most famous boulevard. Taking either of these routes, the automobilist drops sharply from the plateau, whence the capital is seen in all its architectural splendor, into the magnificent stretch of woodland. A portion of the park

near these two entrances is devoted to the National Zoological Garden, within the confines of which is a collection of mammals and birds second only to New York's famous Zoo. Passing the Zoo, the automobilist finds a number of attractive roadways that skirt closely the boulder-strewn creek in its circuitous journey toward the Potomac at Georgetown. Now and again he is led across the creek upon a boulder bridge built with rocks taken from the stream and harmonizing fittingly with its surroundings. Everywhere he can see groups of noble oaks, stately elms and lofty



ONE OF THE NATURAL ROCK BRIDGES.

pinces, while the jagged rock walls of the creek, rising sheer from its pebbly bed, are ever and anon discernible through the openings between the trees as the car flits by.

Every turn in the road brings new beauties into view. In the distance a stone building is seen, and soon the car halts in front of it. A park policeman will tell you it is the old Pierce Mill, built in 1774 and still as substantial as the day it was completed. For many years its big water-wheel turned the mill stones that ground into flour the wheat and corn of the plantations for several miles around. The wheel is idle now, but the splendid state of preservation of the building occasions much surprise and admiration for its builders.

Leaving the old mill behind, the automobilist pilots his car over a succession of little rustic bridges, built of timbers cut in the park, and which look as if they existed there naturally. Beyond them is an old ford across the stream from which the car emerges to plunge suddenly into a wild, tangled forest, the very heart of this wonderful spot of nature. Here one is prone to alight from the car for a few minutes to get very close to nature, where he may in-



FORDING ROCK CREEK IN THE PARK.

hale the fresh fragrance of the dank earth and gaze long at the lofty pines.

One drive through this park is enough to fire the heart of the most experienced automobile tourist, and it is not on record that any motorist was ever satisfied with only one ride. The ride never becomes tiresome, for new beauties are discovered upon every visit, no matter how many times one tours the park.

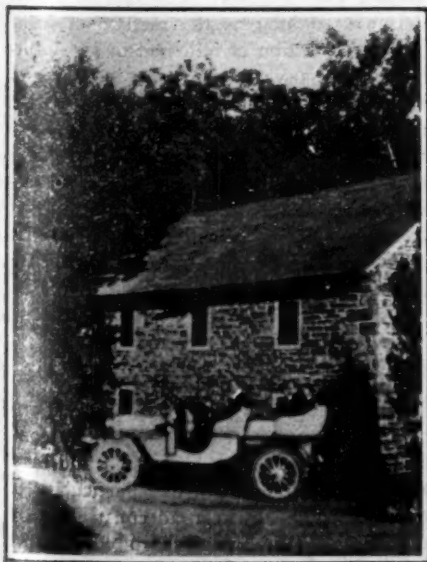
The final plans of the board of control in charge of the park contemplate the purchase of several additional plots of ground, which will add several hundred acres to the reservation. Some time in the near future the park will probably be stocked with pheasants, swans and other fowl.

GROWTH OF ALBANY REGISTRATION.

Special Correspondence.

ALBANY, Oct. 23.—Since the enactment of the first automobile registration and licensing act of 1901, in New York state, no less than 22,800 motor vehicles have been registered and licensed. The annual record in the office of the Secretary of State at Albany is as follows: 1901, 954 certificates or licenses issued; 1902, 1,083; 1903, 6,779; 1904, 6,417; 1905, to date, 7,547. The largest number registered in any one month was 1,500 in May, 1905. The number of professional drivers or chauffeurs registered is 8,000.

At the recent convention of American Road Makers at Port Huron, Mich., Governor Warner of Michigan said the state would spend \$60,000 on road improvement next year. Thirty thousand dollars has been spent on roads this year. For every 50 cents a farmer pays for good roads in Michigan other interests pay 80 cents. In the past two years the state has done more for good roads than was done in twenty years before. The convention delegates agreed in a resolution that there should be a monster good roads convention, attended by automobile and farmers' clubs, granges, and other associations in any way interested in good roads. The following officers were elected: James H. MacDonald, Connecticut, president; W. S. Dickinson, Massachusetts, secretary; and Joseph W. Hunter, Pennsylvania, treasurer.—Chicago *Inter-Ocean*.



IN FRONT OF OLD PIERCE MILL.

Maintenance of Country Roads.

(Concluded from page 375, issue of October 5.)

SOMETIMES the expression is used that permanent roads, if really permanent, should not need repair. This absurdity arises from the misconception of what is meant by permanent improvement. Not only roads nor any material structure can be classed as permanent in the sense that such view implies. Modern road building accomplishes permanent results as compared with the old methods displaced thereby, but not permanent in that conditions provided are not subject to change. When we speak of permanent roads we refer to the manner of construction, as compared with old methods that secured merely temporary results.

The moment the improved road passes from the finishing touches of the builder the destructive forces of nature begin their work, and result in loss of the material of the road and change in condition of its surface.

CHEMICAL AND CLIMATIC ACTION.

First. Loss results from chemical action. This loss is constant and ever varying in its process, although in its results it is very slight as compared with some of the forces mentioned below.

Second. Loss results from climatic action. This loss is moderate in well-constructed and well-drained roads, and considerable in those that are poorly constructed. In all cases loss from climatic action is considerably increased where extremes in temperature are great and frequent, especially when these changes pass many times during the season from above to below the freezing point and the reverse.

Third. Loss results from abrasion or wear by hoofs and wheels. Sufficient abrasion to provide a certain amount of binder from the material of which the surface of the road is constructed is necessary to its permanency. If this binder is not provided the surface of the road will ravel, a word used by road builders to designate the loosening effect of travel on a road surface that has not sufficient cementing quality. This raveling of road material that is deficient in cementing quality is often observed in dry weather. There is, however, a certain amount of wear necessary for the best maintenance of the road surface in good condition, that amount depending on the quality of the material itself. In and near cities the loss from abrasion, wearing of surface and destruction of material from locked wheels and heavy traffic is very great. Rural roads, exempt from heavy travel, especially heavy travel during inclement weather, have but slight loss from traffic, the proportion of loss due to abrasion being of small amount when compared with the loss that results from the cause described next below.

Fourth. The greatest loss, and especially to purely rural roads, is from the washing effect of violent rains, particularly on

grades, removing the finer material that binds the larger pieces together and results in the destruction of the solidity and smoothness of the surface.

"The maintenance of a roadway," it has been said, "is the keeping of it as nearly as practicable in the same condition as it was when originally made. The repair of a roadway is the work rendered necessary to bring it up to its original condition after it has become deteriorated by neglect to maintain it."

There is a wear that cannot be provided for by what is termed maintenance alone. Any architectural or engineering structure will, with the lapse of time, develop defects incident to insufficient care in construction. Wear ensues in a road, even subject to the best maintenance, that requires replacement of materials that is more properly termed repair, although there may not have been neglect in maintenance.

To preserve the condition and serviceableness of any highway will require the addition of materials to its surface in proportion to the losses classified above.

CARE OF ROADS IN EUROPE.

In the care of the improved roads of Europe the plan of prompt remedy of defects, or replacing loss from wear and other causes, so soon as noticeable, has become the universal rule. In this country, however, the opposite rule of delaying repair to that point where its necessity is insistent is almost equally universal. The difference arises largely from the difference in the cost of labor, but it is undoubtedly true that the European method of prompt repair will become more and more the rule in America as the principles of good road maintenance become better known and are fully appreciated on this side.

The greater proportion of the improved roads of Ohio are allowed to continue without attention until travel has brought them to a state in which the surface condition becomes ruinous and unfit for travel. When the destruction of the road surface reaches the stage that remedy can no longer be delayed, loose material is dumped on the surface with no attempt at screening and without system, except, perhaps, giving an undue amount of crown to the extent of ridging along the middle of the road. The finer part of the repair in large proportion sinks through the coarse to the old road surface and allows the larger pieces to remain on top, to be avoided in great degree by travel, and when subjected to travel, to be displaced from their proper position, either becoming round from abrasion and from this condition less and less capable of being compacted into a smooth and firm road surface, or else they are knocked into the ditches to interfere with the drainage.

Depressions on their first appearance should have the mud and dust removed and

be filled with repair on which enough fine dirt or dust is placed to cement the repair into a solid mass.

If the method of covering the surface with a layer of repair is followed the coarser material should be covered and filled with fines and the whole rolled to a firm and smooth surface, so that travel will compact the mass, rather than round the material and destroy its edges that are necessary to its thorough compaction.

LIMESTONE ROADS OF OHIO.

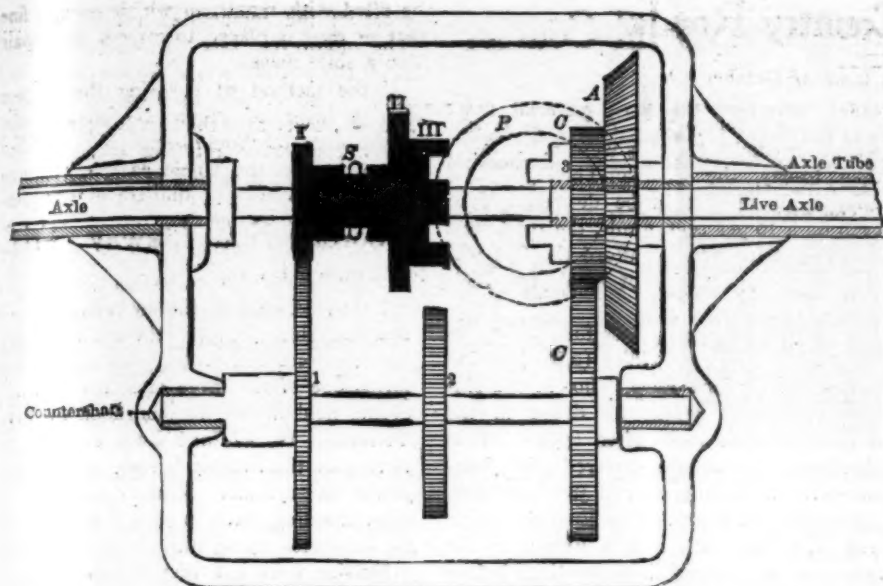
The greater proportion of the limestone roads of Ohio are constructed by placing loose, unscreened material on the surface. When this method is followed travel produces three hollows along the lines of travel, the center formed by the single horse driving, and one on each side by double teams. Outside of these hollows the wheels form two ruts in the loose stone and conditions are produced ruinous to the good condition of the road. The hollows and ruts leading the travel along the constant lines, and the wheels cutting deeper and deeper ruts that more and more tend to hold the water and interfere with drainage and destroy the road.

On all roads constructed of loose, unscreened material, the hand rake should be used to fill up the hollows and ruts as they form with loose stone from the ridges and especially with that thrown toward the edge of the road, in order that the travel may be distributed evenly over the road and eventually secure a smooth, solid surface.

One of the old methods of macadam construction was to secure the compaction of the material without the use of the roller. The loose material was placed on the surface, and whenever it began to rut and firm under the wheels hand-rakes were used to fill up the depressions. The process placed the larger stone, brought to the surface by travel, along the former wheel tracks and tended to transfer the wheels to a new line until gradually the whole road surface was compact and smooth. It would be found advisable, so long as the method of loose stone construction is followed in any locality, and it is very prevalent in Ohio, to resort to the raking-in method as the best procedure to remedy the defects resulting from improper construction. The raking in is comparatively inexpensive, and although the method of compaction by travel is an expensive one, when measured by loss to horseflesh and vehicles, the latter expense is materially reduced, the condition of the road vastly improved and the slight expense is amply repaid.

THE ORDINARY GRAVEL ROAD.

The ordinary gravel road is one that requires raking in order to keep it in condition, and can only be a pleasant and easy driveway by attention in this particular. I refer, of course, to the road constructed of rounded gravel without sharp edges, and which cannot be reduced to a permanently solid mass. A road machine should never



VERTICAL TRANSVERSE VIEW OF DRIVE AND CHANGE SPEED GEARING OF DARRACQ RACER, LOOKING TOWARD THE REAR, PARTLY IN SECTION.

be used on a macadam surface to secure the filling of the ruts, for the reason that it destroys any bond that may have been attained.

Macadam roads are often destroyed at their termini, and at intersections with clay roads, from having the tenacious clay of the mud roads adherent to wheels passing from the latter to the former, dropped on their surface. This coating of clay inevitably results in a picking-up process, converting the surface into a series of undulations. At intersections and ends of macadam roads where this condition is likely to ensue three-inch stone may be placed on the surface of the connecting clay road for a distance of eighty or one hundred feet.

This rough surface, greatly more desirable than the muddy clay surface, will cause the wheels to drop their burden of clay, to the preservation of the good condition of the adjacent macadam surface. The section of clay road thus treated will eventually be cemented into a good surfaced road.

Fuel Filling Tank.

In automobile racing every second counts, and though the distance covered may be hundreds of miles, a single second may win or lose a contest. Therefore everything is done to reduce unavoidable delays to the shortest possible time. The accompanying engraving shows a gasoline can of the kind used by Joseph Tracy, the driver of the Locomobile racer. The can is of heavy galvanized iron, and has a short tube of large diameter for pouring gasoline into the tank, a large filling opening in the tank permitting the fuel to flow into the tank as fast as it will run out of the can. Air is admitted to the can as the gasoline runs out, by means of a tube seen on the left side of the can in the photograph; this tube runs down inside the can, ending at a point near the bottom. Thus when the can is tilted the

gasoline cannot run out of the air tube. The mouth of the can is closed by a metal stopper exactly like the stoppers used on large milk cans. Three iron handles are provided for convenience in carrying and tilting. Such a vessel, used in conjunction with an ample filling hole, saves time, trouble and gasoline. The latter item is, in itself, of little importance in a race where speed and endurance are the main qualifications; but when gasoline is spilled more must be brought to replace it, and thus time may be lost, so that avoiding a waste of fuel may often mean saving valuable seconds.

Crankshafts are frequently broken by pre-ignition, due to overheating caused by foul cylinders.



SPECIAL CAN FOR FILLING FUEL TANK OF RACING CAR QUICKLY.

Darracq Transmission.

Some novel features characterize the Darracq racers, one of which won the Vanderbilt Cup race on October 14. Mechanically operated valves are placed in the top center of the cylinder heads. Ignition is by low-tension magneto. The clutch is of the metal-to-metal cone type, and of about the size of the ordinary leather-faced clutch used on a 12-horsepower two-cylinder car.

The most novel feature of the car, however, is the placing of the gear box on the rear axle. The live axle is in one piece and without a differential gear. Below and parallel to it is the countershaft. The large bevel gear turns freely on the axle, and has attached to it a small spur gear meshing with a larger gear on the countershaft. Fixed on the countershaft are two gears which, when meshed with the slider group on the rear axle, give first and second speeds. Third speed is obtained by pushing the slider group still further until it engages the jaw clutch on the bevel gear, thus locking the bevel gear and rear axle together. Reverse is obtained by placing the large gear lever in neutral position and operating a small lever which serves to throw in an idler between the first-speed gears of the countershaft and rear axle respectively.

The accompanying plan drawing shows a vertical section of the gear box looked at from the front. Bevel gear *A*, to which is secured the jaw clutch *3* and the spur pinion *C*, rotates freely on the live axle which passes through the gear box. The bevel gear is driven by a bevel pinion in front of it, which is indicated by the dotted circles *P*. Spur gear *C* drives the countershaft by means of the spur gear *C1*.

Sliding on the squared portion of the axle is the black group which carries the gears *I*, *II*, and the second portion *III* of the jaw clutch. This entire group can be moved along the axle by means of a shipper, *S*.

In the position shown in the drawing, the first or low speed is supposed to be in operation. The bevel pinion *P* drives the gear *A*, and the spur gear *C*, attached to *A*, drives the countershaft by means of the gear *C1*; gear *1* on the countershaft drives gear *I* and by it the axle of the car. By moving *I*, *II* and *III* to the right until *2* and *II* are in line, second place is obtained, and by moving it still further to the right so that *III* and *3* are in engagement, bevel gear *A* is rigidly secured to the axle, thus giving third speed and driving direct.

American entries for the next Gordon Bennett cup race and for the Vanderbilt cup race, wherever they may be held, have already been made by Col. Albert A. Pope and by his son, Albert L. Pope. Each has entered a Pope-Toledo racing car in both events.

When an Englishman throws out his clutch he "declutches" or "unclutches."

New Records on Chateau-Thierry Hill Course.

Special Correspondence.

PARIS, Oct. 2.—Every class of automobile was represented in the Chateau-Thierry hill climb this year, from the 110-pound motorcycle to the five-ton truck. The heavy vehicles opened the contest, being sent away over the mile course with a flying start. Although it was not very exciting to watch a truck with five tons of stones mount the hill at three miles an hour, these events were followed with the greatest interest by the professional automobilists, who now fully realize the importance of industrial vehicles.

The course mounts up from the water's edge at an almost uniform 10 per cent. grade (being slightly less at the beginning and slightly more in the middle), and is perfectly straight for the first kilometer. Past this point there is an "S" bend rather difficult to negotiate, and notwithstanding the improvements which have been made in the road a speed of more than forty miles an hour would be dangerous for the racing cars. At the bottom of the hill a Mors timing apparatus was installed in a little cabin.

There were five competitors in the commercial vehicle class. A Brillé truck with a load of five tons covered the mile in 17 minutes 53 seconds; an Aries wagon carrying three tons went up in 17:20, and a lighter Automoto wagon with a load of less than three tons registered 9:03 2-5 for the mile. Two omnibuses that are at present undergoing tests by the Paris General Omnibus Company attempted the hill. One of these, a Brillé 'bus, into which no fewer than sixty-three persons had been packed (the official carrying number is about forty), went up in fine style in 14:42, and a heavier gasoline-electric Krieger 'bus, no less crowded with passengers, climbed the mile in 17:03 2-5. The Brillé had come from Paris by road the previous day with a load of passengers, and returned immediately after the races, covering the 110 miles in a remarkable manner for a 'bus constructed for Paris streets.

The class for motorcycles with a third of a litre cylinder capacity had eight starters. The mile was covered by Guippone on a Peugeot in 1:40 3-5 from standing start, last year's time being 1:43 4-5. Anzani on an Alcyon machine was second in 1:49 1-5, and Contant on a Quentin motorcycle was third in 1:52 4-5. Two Peugeot machines were respectively fourth and fifth.

Two tourist classes were run over the mile course, the best time for vehicles costing less than \$800 being 5:30 4-5, made by a Boyer car; and the best in the \$800 to \$1,600 class was 3:25 2-5, also made by a Boyer.

When the afternoon events were run it was announced that owing to the sharp turn just beyond the kilometer line the mile would not be run, all events being decided

on the kilometer course. A few years ago, when hill climbing speeds were much lower than to-day, the Chateau-Thierry course offered all that could be desired. Now, even on a 10 per cent. grade, the road must be straight in order to afford the fast machines an opportunity of displaying their speed.

Victory in the racing class for cars weighing not more than 1,000 kilos (2,204 pounds) fell to W. Clifford Earp, who, in the six-cylinder Napier which he drove in the Gordon Bennett race—often spoken of as Macdonald's machine—covered the kilometer from standing start in 38 1-5 seconds (58.5 miles an hour). The English driver, who is doing a little tour in France on the racer, and will attend three meetings before returning home, ran a splendid course.

Stead, on a Mercedes, was not far behind the Napier, covered the kilometer in 0:39 2-5. The time for the Mercedes driven by Faure was 0:46 1-5, and for the Mors driven by Pierron, 0:53 3-5. The previous record for this course was 0:45 1-5, accomplished by Rigolly on a Gobron-Brillié.

In the light car class Hanriot, with a Darracq weighing less than 1,430 pounds, covered the kilometer in 0:41 3-5 (53.7 miles an hour). As he was driving a Darracq car for the first time, his engagement with the firm having only begun on the day of the race, his performance was a remarkable one. De la Touloubre, in a Darracq, entered in the 880 pounds class, registered 0:53 3-5 for the kilometer.

Five tourist classes were run over the kilometer course at racing speeds. The fastest time was 0:55 2-4, accomplished by a Panhard-Levassor in the \$5,000 class, beating the old record by one minute. A Radia in the \$3,600 to \$5,000 class lowered the previous record of 1:32 1-3 to 1:04 3-5. A Fiat covered the kilometer in 1:07 1-5 in the \$3,000 to \$3,600 class; a Serpollet steamer in the \$1,600 to \$2,400 class won in 1:13 1-5, and a Svett in the \$2,400 to \$3,000 class registered 1:40 4-5.

A tri-car race was announced, but owing to a dispute as to free exhaust or muffler

most of the competitors refused to start. The motorcycle race for machines of less than 110 pounds was a walk-over for Anzani on an Alcyon in 0:55 3-5 (one-fifth second slower than the existing record), the other competitor refusing to agree to a standing start proposed at the last minute.

Dourdan Straightaway Trials.

Special Correspondence.

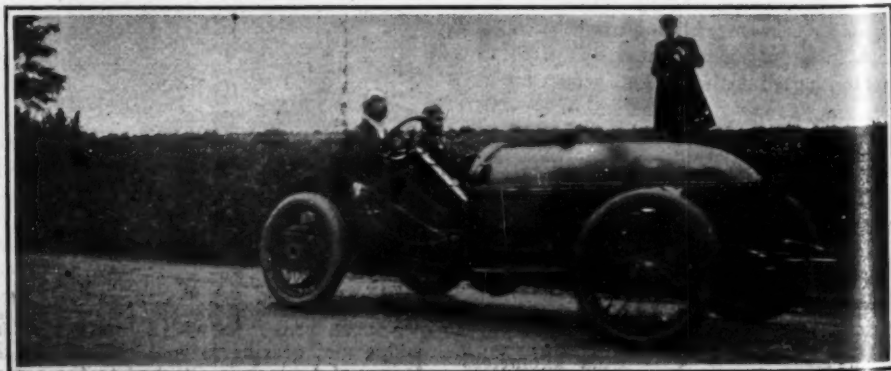
PARIS, Oct. 9.—Sandwiched between Chateau-Thierry and the Gaillon hill-climbing contest, the Dourdan meeting forms one of the three season's-end racing events held in the neighborhood of Paris. Yesterday W. Clifford Earp renewed his victory of the Sunday before, his 90-horsepower six-cylinder Napier covering the mile, standing start, in 53 4-5 seconds, and the kilometer, flying start, in 25 3-5 seconds.

Entries were not very numerous in the racing section, the Englishman, indeed, having but one competitor in his own class—a 1904 Mercedes, driven by Faure, which covered the mile in 1:08 4-5, and the kilometer in :34 3-5.

The big Napier was not so fast on the mile as the small 110-pound Peugeot motorcycle ridden by Cissac, which got over the distance in :53 1-5, being three-fifths of a second faster than its mighty rival. Cissac's time for the kilometer, flying start, was slower than Earp's, however, being :27 3-5. In the same class (motorcycles of less than 110 pounds), Champoiseau's Peugeot did 59 seconds for the mile and :28 4-5 for the kilometer. In the class for motorcycles from 110 to 550 pounds, Guippone finished first on a Peugeot in :57 for the mile, standing, and :28 for the kilometer with flying start. Anzani was second on a Buchel in 1:08 4-5 and :34 2-5 respectively.

In the light car class speeds were not up to either that of the little motorcycles or the heavy racers, Hanriot on a 400 to 650 kilos (881 to 1,432 pounds) Darracq registering 1:03 2-5 for the mile, standing, and :29 2-5 for the kilometer, flying. A Darracq driven by De la Touloubre in the 250 to 400 kilos class (550 to 881 pounds) registered 1:13 1-5 and :38 4-5.

A portion of the road on the Dourdan circuit runs through a forest, and dries out



CLIFFORD EARP IN SIX-CYLINDER NAPIER, WINNER IN RACING CAR CLASS IN CHATEAU-THIERRY AND DOURDAN EVENTS IN FRANCE.



GENERAL VIEW OF START IN CHATEAU-THIERRY HILL CLIMB, LOOKING IN THE DIRECTION OF DEPARTURE OF THE CARS.

but slowly. Although Sunday remained fine, the road there was still a trifle damp, which, together with rising ground and a slight head wind, tended in a small degree to reduce speeds. Tourist classes were very well filled, and included all varieties of vehicles from motorcycles to \$7,000 cars.

FRENCH CONTESTS FOR 1906.

French Club Decides Not to Compete for Vanderbilt Cup Again.

Special Correspondence.

PARIS, Oct. 9.—It was expected that important decisions would be arrived at by the Automobile Club of France at its meetings last week regarding the program for next year. The committee has, however, passed only a few general resolutions, leaving to future meetings the labor of arranging a more detailed program.

It was decided that whatever may be the result of the Vanderbilt Cup race, the club will not compete for this trophy next year.

A tire competition will be organized during 1906. This, as has already been announced in *THE AUTOMOBILE*, will consist of a long-distance run in which the competitors will be at liberty to change any part of the motor they desire, but must not touch the tires. It is, in fact, a reversal of present conditions of road racing and reliability tours, the existing regulations regarding motors being applied to tires. It is admitted that the organization of such a competition presents serious difficulties, but the club believes that it can successfully overcome them. So far as is at present known, the event will last two days, each day's run consisting of about 310 miles. An equal number of marked tires will be allowed all competitors, and the motors will be as far as possible of equal weight. Tires may be repaired during the course with materials carried on the car, but none other than those officially stamped can be substituted. As in an ordinary race, the car coming in first will be the winner.

An endurance test of 5,000 kilometers (3,130 miles) across Europe, as proposed by the Marquis de Dion, has also been offi-

cially adopted by the club for next year. This monster competition will doubtless be a run from Paris, through France to Italy, Austria, Germany, Belgium and back to Paris, open to all classes of cars. Its organization will certainly be as difficult as that of the tire competition, but the vice-president of the club, an enthusiast in touring events, is convinced not only of its practicability but of its complete success.

No decision has been reached regarding a speed test next year in place of the Gordon Bennett race. Whether the club's Grand Prix will again be brought to the fore, whether some outside event will be encouraged, or whether no road racing at all will be held, is a matter to be settled at the next meeting in a fortnight's time.

European Road Race Question.

Special Correspondence.

PARIS, Oct. 10.—At its last meeting the committee of the Automobile Club of

France ignored the question of road racing for 1906. Advice has just been received in Paris from Berlin that the German Automobile Club does not intend to let the subject of an international road race lie dormant, however, for the German club is about to send a letter to the French organization, inviting it to call an international conference in Paris, to which all clubs would be invited, to decide if road racing should be reduced to one great annual event only, suppressing all others. A decision of a simple majority of the delegates would be final.

If the French club refuses to call together such a conference the German club will do so itself, the meeting being held at Berlin in November. Should the French club decide not to organize its own races next year, a choice would have to be made between the Belgian Ardennes meeting and the Florio meeting on the Brescia circuit, Northern Italy, as the one official road race.

French Automobile Regulations

Special Correspondence.

PARIS, Oct. 10.—The Minister of the Interior, who had announced his intention of modifying the French automobile regulations in a record-breaking time, finds himself face to face with an unforeseen difficulty. The members of a parliamentary committee formed in 1903 to report on automobile matters have written to the Minister protesting that they have been passed by in favor of an entirely new body, and asking if this is intended as a reproach upon them.

The 1903 committee has for more than a year been getting together information on this subject, and they point out that in a matter of this nature, in which commercial,



MILITARY WAGON AND SEARCHLIGHT TRAILER BUILT IN ENGLAND FOR USE IN EGYPT.

This unique outfit was constructed to the requirements of Major-General Wingate by the Arrol-Johnston Company. The car has a 20-horsepower, three-cylinder engine fitted with two carbureters, one for gasoline, and the other for kerosene. The wheels have sheet metal sides to prevent sand getting between the spokes, and are fitted with 3 1/2-inch broad, flat tread rubber tires to prevent sinking in the sand. All of the engine and gearing is well encased, so that grit will not get into the working parts. A powerful winch is attached to the car so that it can be warped up steep grades by a steel cable. The trailer is fitted with electric equipment of dynamos and searchlight, provision being made so that the dynamo can be driven from the engine of the car.

legal and individual interests are involved. It is impossible to draw up satisfactory regulations on the spur of the moment. If the 1903 committee takes as long to draw up conclusions as to gather information, it will not give France new regulations for some time to come. If the new committee, on the other hand, has to go over the whole field again, it cannot be expected that it will be ready with reforms in a shorter time. Several members of the newly appointed committee are at present abroad, and are probably not yet aware of their nomination.

Replying to a delegation of the Automobile Club of France, M. Etienne has given assurance that nothing will be done that is likely to injure the industry. On the whole, French automobilists need not have much fear of Draconic changes.

French Tire Tool.

The accompanying engravings illustrate a new tire tool recently patented in France, designed to facilitate the placing of the bead in the rim, a task that is usually accom-

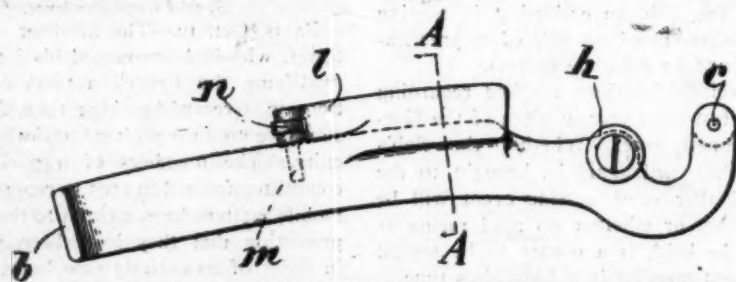


FIG. 2.—SIDE VIEW OF TIRE TOOL, SHOWING HOOKED END, WITH ROLLERS.

plished with the aid of miniature crowbars and is always difficult and distasteful.

The new tool consists of a main forging *A*, Fig. 2, having formed integral with it a hooked member at one end and a handle *b* at the other. At the end of the hook is a roller *h*, in which is a groove to fit over the edge of the rim. A second roller *n* is mounted on a pin on the opposite side of the tool; this roller is to lift the edge of the shoe to a level with the edge of the rim. Back of the second roller is a guide *l*, fitted at its rear end with a roller *n*; *m* is an extension of the pin on which roller *n* is mounted.

The operation of the appliance is shown clearly in Fig. 1. The tool is placed in the position shown and is held in place at one end by the grooved roller and at the other end by the downwardly projecting pin *m*. Roller *h* lifts the edge of the shoe to the proper height, and as the tool is pushed around the rim, hooked end first, the bead of the shoe is pushed over the edge of the rim by the guide *l* and dropped into position.

Fig. 3 shows the pin *m* in engagement with the edge of the rim.

When the carburetor and the ignition apparatus are adjusted to the best of your ability, leave them alone, and if the engine still shows less than normal power look for something wrong with the valves.

Foreign News Notes.

Herr Jellinek-Mercedes, talking of the withdrawal of Baron de Caters and Werner from the Vanderbilt race, stated it as his opinion that after the coming season the German Daimler company would not start any cars in purely speed contests, as it intended to devote itself to the furtherance of touring; touring contests being of more direct interest to the buying world at large than speed events, which, after all, are only for the few. These, he thought, have had their day; they helped an industry to huge progressive strides, but now are superfluous.

The principal German automobile show will be held at Berlin next February, under the auspices of the German Auto Club. Enquirers will receive prompt attention from the Secretarial Bureau, at 16 Leipziger Platz, Berlin, W.

A trial of tires and lamps promoted by the Automobile Club of Great Britain, is provisionally fixed for early in February, the place being London. The postponed

show their 1906 types and many private buyers will be saved the trip to the Paris Salon in December.

A company has been formed in London to put motor cabs fitted with taximeters on the streets of the metropolis. The London Automobile Cab Co., Ltd., is said to have a capital of \$500,000, and has secured the services of Samuel Michaels, who for some

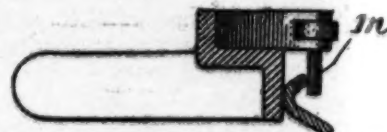


FIG. 3.—END VIEW, PARTLY IN SECTION, SHOWING PORTION OF RIM.

years past was president of the London Cab Drivers' Union, as general manager.

A competition of speed indicators has been arranged by the Mitteleuropäischer Motorwagen Verein, of Berlin, Germany, and the Prussian Ministries, and will be held commencing March 31, 1906. Details of the competition may be obtained from the secretary of the Mitteleuropäischer Motorwagen Verein, Berlin W. 9., Linkstr. 24.

C. L. Charley has placed a huge order for 864 chassis with the German Daimler works, of which number 175 will go to New York, 215 to London, 50 to Florence and the rest to Paris, where they are given a home in the Mercedes Palace for the present.

The Automobile Club of Great Britain and Ireland has been busy with its dust experiments again, the latest of which were conducted with about twenty cars on a stretch of road in Berkshire. The cars were run over a measured distance at various speeds and photographs were taken of their achievements in the dust-raising

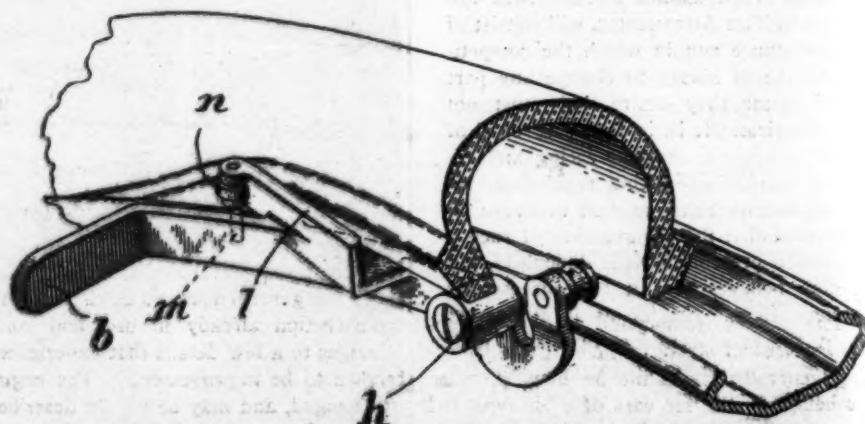


FIG. 1.—FRENCH TIRE TOOL IN POSITION FOR REMOVING OR REPLACING SHOE.

dred exhibitors have taken spaces, of whom 104 will show automobiles, thirty-six commercial motor exhibits, twenty-six auto boats and the rest carriage work, tires, parts and accessories. Thirty-six foreign firms will be represented in the car section, nine in the commercial and eight in the marine division. The French firms will

line. The photos provided a definite basis for conclusions, as it is so easy for the naked eye to err. The car that raised the least dust was a 12-horsepower Sunbeam. There can, however, be only a very slight abolition or mitigation of the nuisance until the road surfaces are better laid and better adapted to the traffic.

Pierce 1906 Model Touring Cars.

THE Pierce cars may be said to be especially interesting, not alone on account of their mechanical features, but also because a Pierce "Great Arrow" won the Glidden touring trophy, after an excellent run from New York City to Bretton Woods and return. The manufacturers, the George N. Pierce Co., of Buffalo, N. Y., build an 8-horsepower stanhope, which is familiar to the automobiling public; a four-cylinder car of the modern type, weighing 2,600 pounds, with 28-32-horsepower motor; and a 40-45-horse-power car on similar lines, weighing 3,200 pounds. The two four-cylinder cars differ but little except in point of size and power, and the following description applies equally to both machines.

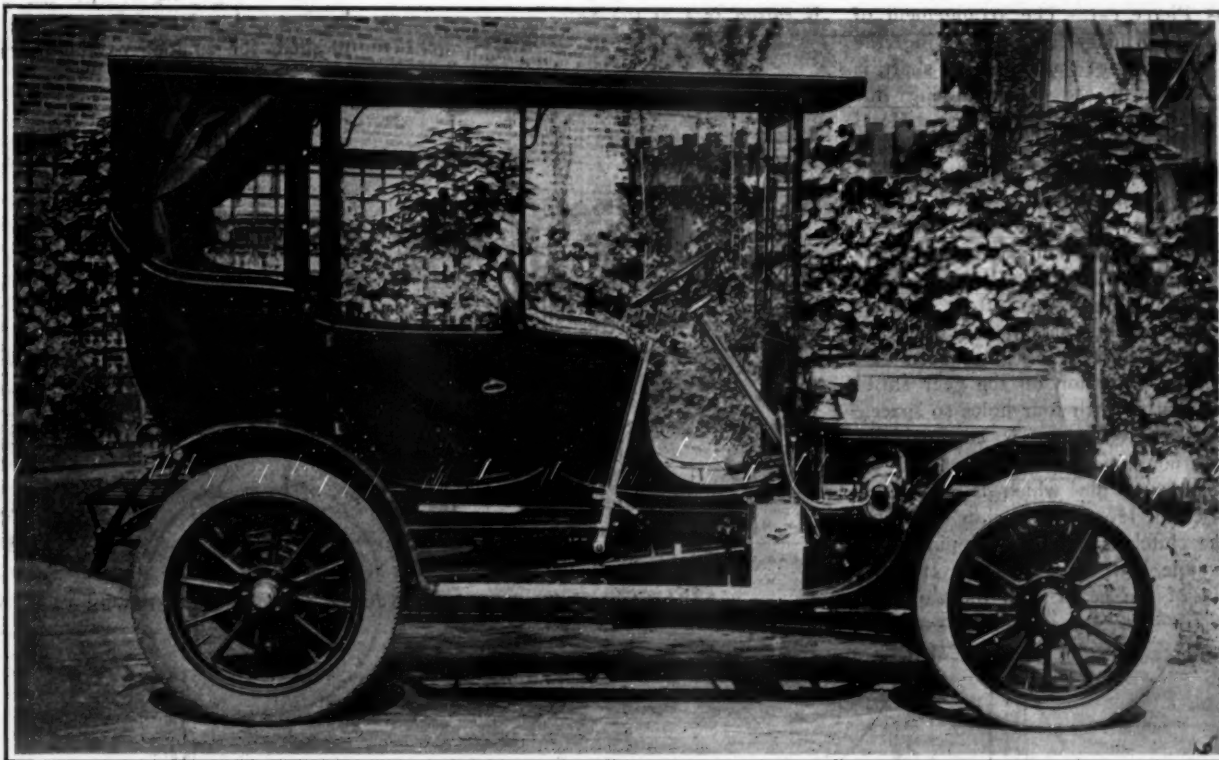
A feature of the Pierce cars is the liberal

reverse, the drive being direct on the high speed. Propeller shaft and bevel gear drive is adopted. Pressed steel framing is hot riveted together, the joints between the three pressed steel cross members and the side frames being reinforced with large pressed steel gusset plates. Motor and transmission are supported on a sub-frame consisting of two bars of angle steel extending from the front cross member to the middle one. The rear axle is, of course, tubular, with the driving shafts inside; the front axle is a heavy steel forging of I-beam section, with a wide-sweeping downward curve from knuckle to knuckle. Steering knuckles are of the Lemoine type, heavy and substantial.

In its details the Pierce car shows few

ders are a little further apart than the others to allow room for the center bearing of the crankshaft; owing to the closeness of the cylinders, the connecting rod big ends are offset so that the crankpins may be made long enough to give ample bearing surface.

The lubricating system is peculiar and interesting. Holes are drilled in the shaft, so that oil forced into the outside main bearings is carried through the shaft to the end crankpins. The oil feed to the centre crankshaft bearing supplies oil in the same way to the two inside crankpins. A gear pump forces the oil to the bearings somewhat faster than the bearings need it; the surplus runs to the bottom of the crankcase, from whence it is again taken up by the pump and so kept circulating. The crankcase is of aluminum, divided horizontally, and can readily be removed, as the



PIERCE 40-45 HORSEPOWER TOURING CAR FOR 1906, WITH SWELL-BACK ALUMINUM BODY FITTED WITH CANOPY TOP.

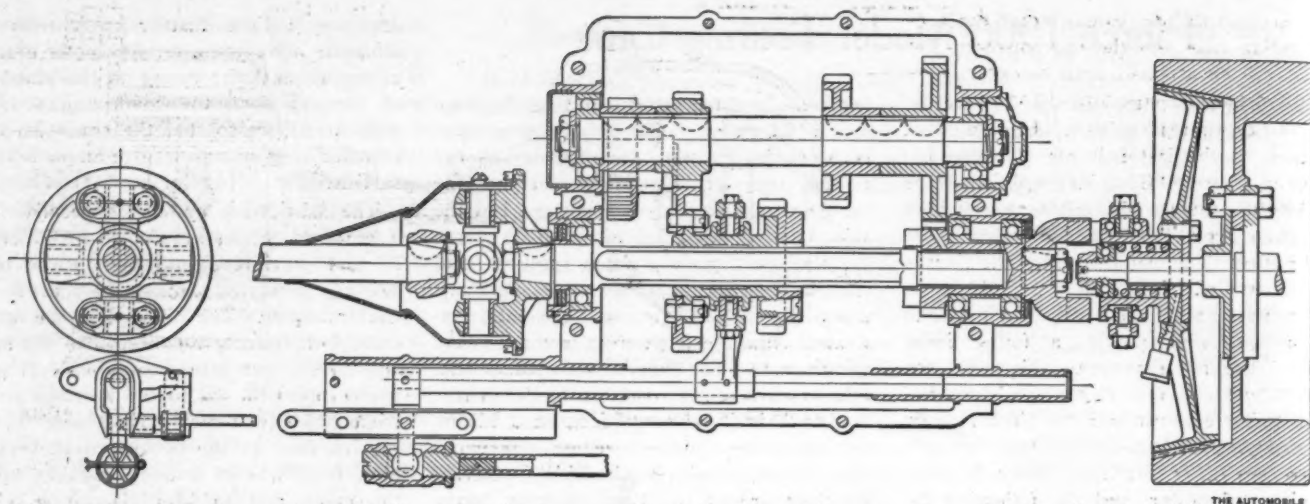
use of ball bearings. Front and rear wheels, the live rear axle, the differential and the transmission shafts are fitted with ball bearings.

The Pierce four-cylinder cars present no features of startling novelty, but, speaking generally, are built on lines accepted as being correct for cars of their type and power. The four-cylinder vertical motor is hung low, so that when the car is normally loaded the crankshaft, primary transmission shaft and propeller shaft are in line. The universal joints are thus relieved of much of the wear and strain unavoidable when they are normally out of line. Transmission is by sliding gears, a single lever on the steering pillar controlling the three forward speeds and

changes from the design adopted for the 1905 car; like many other manufacturers, the George N. Pierce Co. is well satisfied with the general features of the design and construction already in use, and confines changes to a few details that experience has shown to be improvements. The engine is unchanged, and may be briefly described as having four separately cast cylinders with integral heads and water jackets; mechanically operated valves symmetrically placed on opposite sides of the cylinders. The cylinders are very close together—in fact, each cylinder has a flat cast in its side, the flats coming between the first and second and the second and third cylinders, permitting close placing though retaining sufficient water space. The two middle cylin-

der crankshaft bearings are all hung from the upper half of the case. Ignition is by jump spark; the distributor is of the roller type and is placed on the top of a vertical shaft, driven by bevel gearing, between the third and fourth cylinders, counting from the front. An automatic governor, acting on the throttle, regulates the speed of the motor within controllable limits. A small lever working on a notched quadrant on the steering wheel column is used to regulate the governor, altering the maximum speed. The motor in the 1906 car is hung from the under side of the sub-frame; in the 1905 car the lugs rested on top of the frame members.

The transmission gear has been altered so that the drive is direct when the high



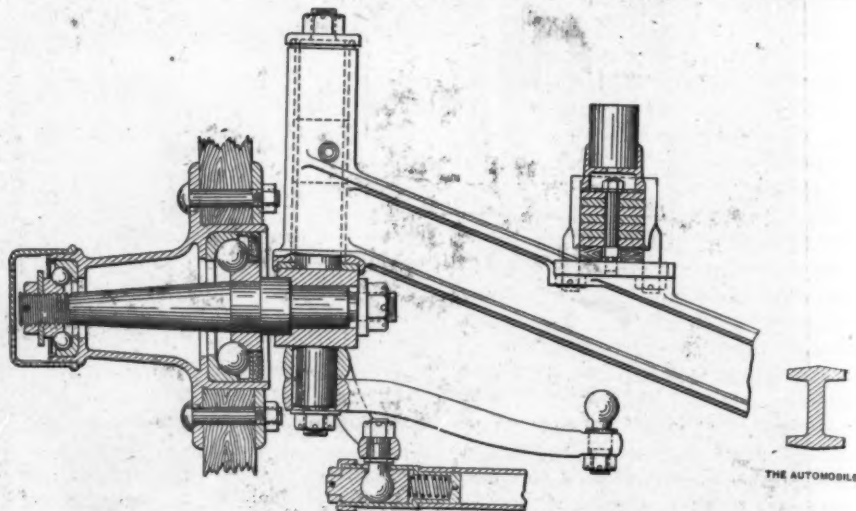
HORIZONTAL SECTION OF PIERCE DIRECT DRIVE TRANSMISSION SHOWING FLYWHEEL CLUTCH SLIDING GEARS AND CARDAN JOINT.

gear is in use—which was not the case with the 1905 Pierce car. The arrangement of the divided primary shaft, carrying the sliding gears, and of the secondary shaft, is clearly shown in the accompanying line engraving of the transmission gear. Hess-Bright ball bearings are used on all the shafts. The high speed is obtained by locking the teeth of a jaw clutch, which causes the primary shaft to run solid and gives a direct connection from the crankshaft to the bevel gears on the rear axle. An interlocking device is fitted, so that gear changes cannot be effected until the clutch, a leather-faced cone, has been disengaged. An extension on the gear shifting rod is drilled with four holes so spaced that when a given gear is engaged the hole corresponding to that gear will be directly under a pin which is connected to a bell-crank lever in the clutch system. When the clutch is engaged the pin drops into the hole and effectually prevents all movement of the gears until the clutch is

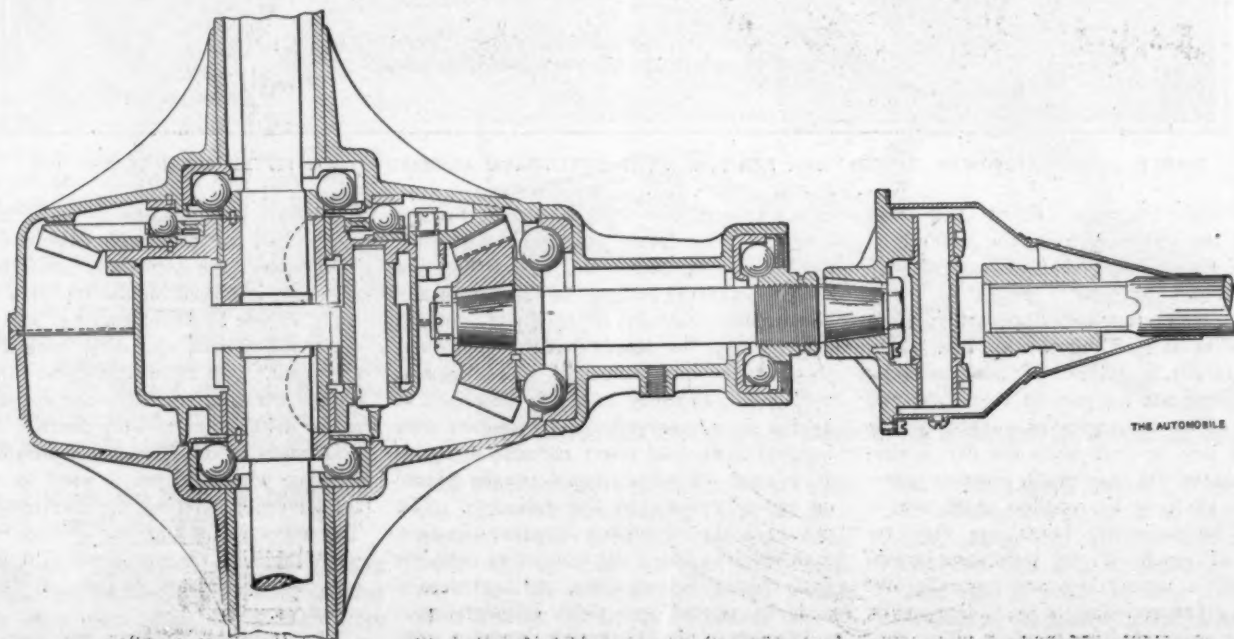
withdrawn, when the pin at the same time is raised free of the hole.

The gears cannot be shifted while the

clutch is engaged; neither can the clutch be engaged unless the gears are correctly meshed, for as long as the gears are not



ARRANGEMENT OF STEERING KNUCKLE OF 40-45 HORSEPOWER CAR.



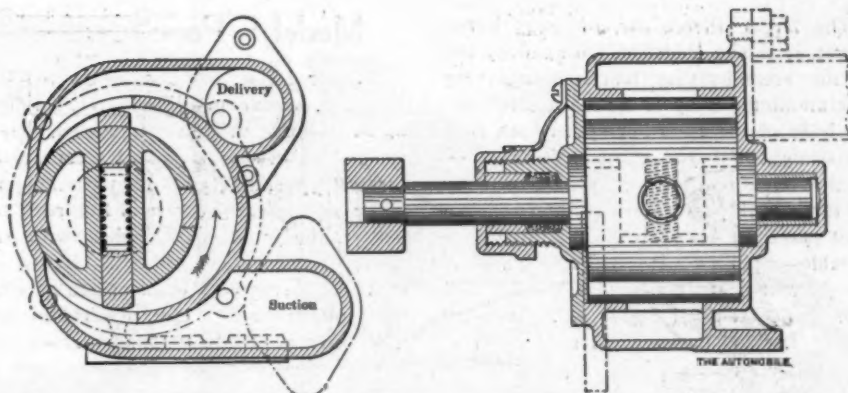
HORIZONTAL SECTION OF PIERCE DRIVE, SHOWING BEVEL GEARING, DIFFERENTIAL AND BALL BEARINGS.

fully meshed the pin cannot enter the corresponding hole and the movement of the clutch will be arrested until the gear lever is shifted and the hole brought in line with the pin. Thus gear stripping, from improper meshing or attempting to change with the clutch in, is prevented. If the clutch pedal is released before the gears are in full mesh the pin will merely slide along until the appropriate hole registers, when it will drop in and permit the clutch to enter.

The lever by which the gears are shifted is placed on the steering wheel column under the wheel, instead of in the usual vertical position at the side of the car; there is but one side lever, which is used to apply the emergency brakes which act on drums on the rear hubs. The regular service brakes, applied by pedal, are expanding rings acting inside the same drums, the entire braking effort being applied at the same place. In the 1905 car the foot brake was a band and drum on the differential.

The steering gear is of the thread and nut type, provided with ball thrust bearings. The column consists of three concentric tubes; the outer one serves as a casing and support, and is fixed; the second is for changing gears and carries the gear lever; and the inner one is for steering. The governor regulator is mounted on the column, as is also the ignition timing lever; both can be shifted without taking the hands from the wheel. A switch button on the left side of the wheel permits the instant cutting off of the ignition current in case of sudden necessity.

A newly designed and patented carbureter supplies fuel to the motor; the illustration of this device shows the arrangement of its parts. A small portion of the exhaust gas is led to a jacket surrounding the mixing chamber, so that the temperature is approximately uniform after the motor has been



TRANSVERSE AND LONGITUDINAL SECTIONS OF ECCENTRIC ROTARY WATER PUMP.

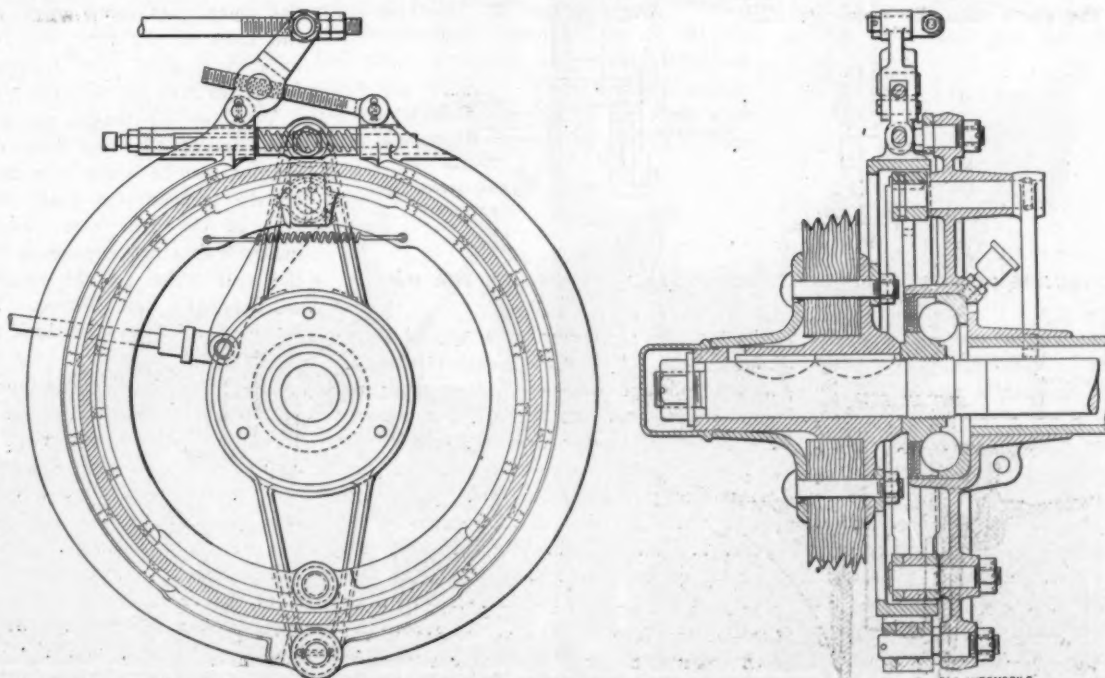
started, regardless of the weather conditions. An auxiliary air valve, normally held on its seat by a spring, is lifted as the motor speed, and consequently the speed of the air passing through the carbureter, increases. Thus the supply of air is proportioned to the requirements of the engine, while the suction at the spray nozzle is kept down to the proper degree. A piston, working easily in a dash-pot, prevents rapid fluctuations of the auxiliary air valve, though permitting sufficiently quick movement to meet the changes of speed of the motor.

A novel feature of the ignition outfit is that, in addition to a coil for each cylinder, there is an extra coil which, in case of the breaking down of any of the regular coils, can be instantly placed in the circuit without stopping the engine. A six-volt storage battery is the regular source of current supply; ten dry cells are furnished for spares, and are connected up to give a seven-volt current.

Following the regular Pierce practice, the body is made of cast aluminum from the seat line upward; in the case of the larger car the outlines have been somewhat

changed, especially in the rear, with a view to improving the appearance of the car. Three adults can readily be accommodated in the wide rear seat of either machine; the front seats are of the popular individual type. The dashboard is hollow and, like the upper part of the body, is of cast aluminum, with moldings of solid brass. Two mahogany cabinets are provided for carrying small tools.

Wheels are 36 inches in diameter, of wood, with 5-inch tires in the rear and 4 1-2-inch tires in front. Springs are all semi-elliptic and very long, those in front being 40 inches long and the rear ones 53 inches. The gasoline tank, under the front seats, holds twenty gallons, and has a pressure feed to the carbureter, the exhaust gases being used to furnish the pressure. Special provisions are made for the exclusion of dirt and to prevent too high a pressure in the tank. A sheet aluminum pan protects the under part of the motor and the transmission from the dust and mud of the road. Clutch and brake pedals are of the push type, these being more efficient than the press-down kind.



SIDE VIEW AND VERTICAL CROSS SECTION OF DOUBLE-ACTING EXTERNAL AND INTERNAL HUB BRAKES.

The larger Pierce car, of 40-45 horsepower, is shown complete, with canopy top, in the accompanying halftone engraving. The aluminum body is curved at the rear; the body of the 28-32-horsepower car is of the straight-line type. The wide rear seat of the larger car affords plenty of room for three adult passengers, and there is sufficient space for even a tall man to be comfortable—a point of no small importance to the six-foot passenger, especially on a long run. Side doors are wide and easily entered. Lockers under both front and rear seats afford room for carrying the tools

Model F Pope-Hartford.

The Pope-Hartford touring car for 1906, Model F, has a four-cylinder vertical motor of 20-25 horsepower, water cooled, driving the rear wheels by means of a cone clutch, three-speed sliding gear transmission, propeller shaft, bevel gears and live rear axle. The frame is of ash, flitched with steel plates, 1-16 of an inch thick, bolted on; cross members and the sub-frame on which the motor is carried are of channel steel. The body is of the regular touring type, having room for five passengers, and the

bearing on the crankshaft is reached through these holes.

Lubrication of the engine bearings and the cylinders is by means of a force feed oiler driven by a belt from the camshaft, the oiler being placed on the dashboard. Ring oilers, with individual wells, are provided for the lubrication of the main shaft of transmission. The secondary shaft is so located that its bearings are immersed in the oil with which the gear case is partly filled, the oil keeping the gears thoroughly lubricated. All the bearings in the transmission gear are of phosphor-bronze. Motion from the gear-changing lever is transmitted to the gears through a gear sector, pinions and a rack inside the gear case.

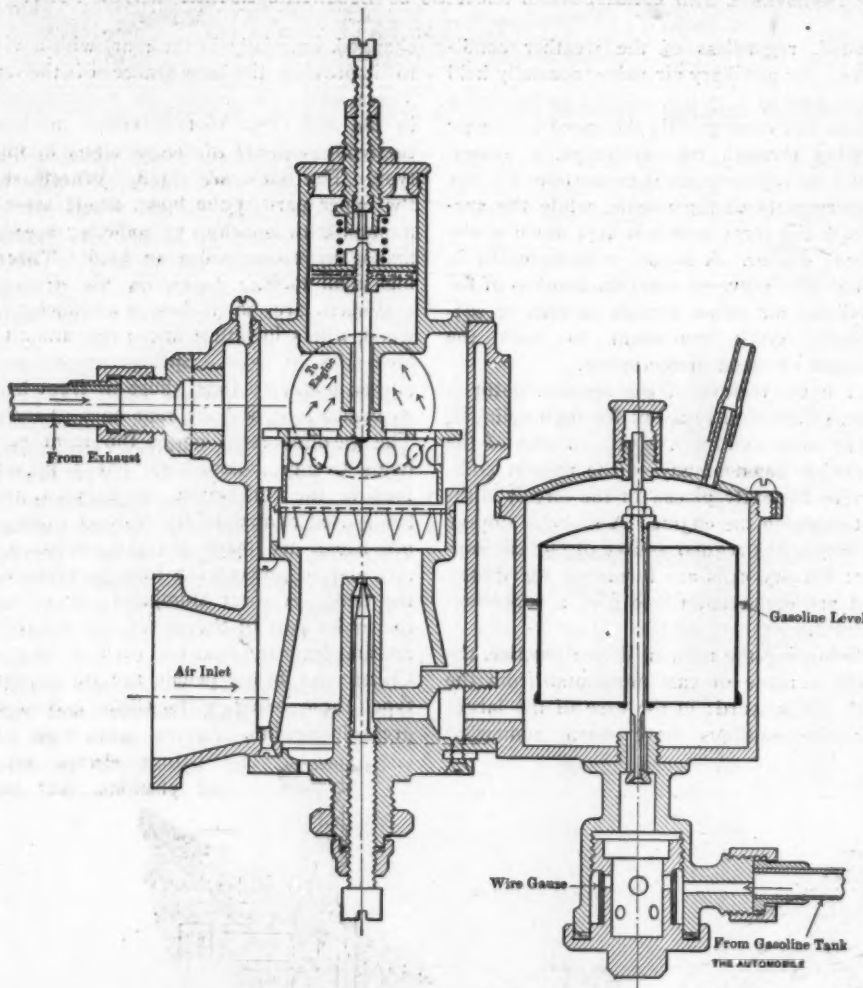
Ignition is by jump spark, a secondary distributor being placed between the second and third cylinders of the motor, driven from the camshaft by spiral gears; a single coil is used. The lever by which the time of ignition is controlled is mounted on top of the steering wheel column, above the wheel, and does not turn with the wheel. The throttle lever is also over the steering wheel, and stationary. The carbureter is said by the manufacturers to be entirely automatic at speeds of from 150 to 1,000 revolutions a minute.

Two universal joints are interposed between the transmission and the rear axle, one at either end of the propeller shaft, and provision is made for the ample lubrication of these joints. The pins are of hardened steel and work in removable phosphor bronze bushings.

The pinion driving the rear axle is made integral with its short shaft, which is mounted in two Timken roller bearings, while the large bevel gear is backed with ball bearings to take the thrust of the pinion. The live shafts are squared into the hubs of the large gears of the differential, the outer ends being keyed and locked to the hubs of the rear wheels. The front axle is a solid steel forging, with ends forked to take the steering pivots.

Two sets of brakes are provided, both being operated by foot levers or pedals. The regular service brake is a drum and band on the transmission shaft, directly in the rear of the gear case; while the emergency brakes are expanding rings fitted on the rear hubs, all the rings being faced with camel's hair belting. Either set of brakes can be made to lock the wheels of the car.

The engine hood opens from either side; guards are wide and flaring, giving ample protection from flying mud, and running boards extend from the front to the rear guards. The dashboard is of curved sheet steel with reinforcements of wood finished in natural colors. Wheelbase is 98 inches; tread, 56 inches; wheels, 32 inches, front and rear, with 4-inch tires; ball bearings on all road wheels. The gasoline tank holds 15 gallons, and the water system holds 5 gallons. Lamps, horn, tools and floor mats are supplied with each car.



VERTICAL SECTION OF PIERCE AUTOMATIC FLOAT FEED CARBURETER FOR 1906.

and supplies required when touring, and a rack at the rear provides a substantial support for a large hamper or trunk.

Shortly after dark Wednesday night a heavy report like that from a shotgun was heard at the rear of the courthouse on West Main Cross street. In less than a minute a large crowd had congregated, eager to learn the cause. As near as can be learned, a tire of an automobile that bursted caused the report, although the driver kept on going. Some assert that a gun was fired from the machine, but this is hardly possible.—Findlay (Ohio) Republican.

rear of the tonneau has a special curve that is stated by the manufacturers to act as an efficient means of preventing the entrance of dust into the car, a current of air being deflected downward.

The motor has its cylinders cast in pairs with integral water jackets, heads and valve housings; the valves, located in the head, are all mechanically operated, and are all of the same size, being, in fact, interchangeable. Crankshaft is of nickel steel, with long bearings. Access to the cranks and connecting rods is obtained through two large hand holes located on the right hand side of the crank case; every

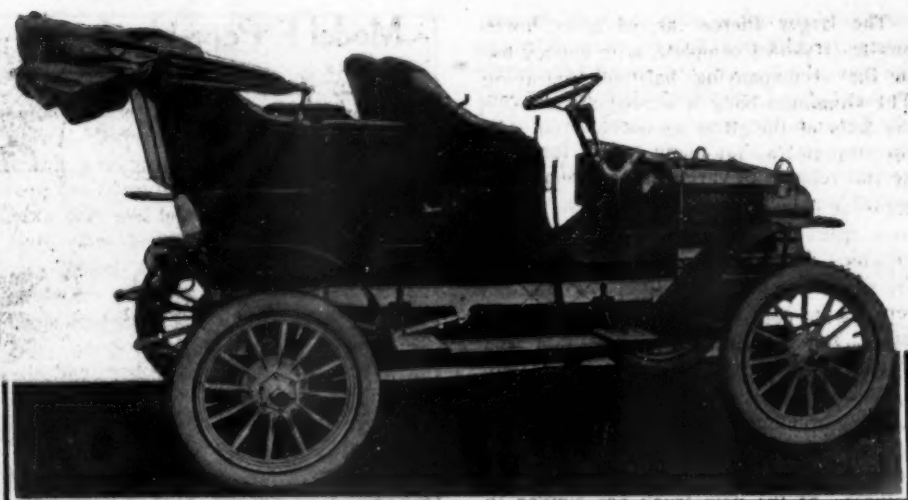
Reo Light Cars and 'Bus.

The Reo five-passenger touring car for 1906 is a light machine, weighing 1,600 pounds, and, with the detachable tonneau removed, but 1,515 pounds. A pressed steel frame is supported on full elliptic rear springs, and semi-elliptic front springs. Axles are tubular, the rear axle being of the live type and driven by heavy roller chain. The road wheels are of the wood artillery type, 30 inches in diameter. They run on roller bearings, and are shod with 3 1-2-inch tires; the wheelbase is 90 inches and the tread 55 inches.

A double opposed cylinder motor rated at 16 horsepower drives the car through a two-speed-and-reverse planetary transmission in which there are no internal gears. The motor has integral heads and water jackets and mechanically operated valves. A tubular radiator, tank, and a gear pump comprise the cooling system. Ignition is by jump spark, two sets of dry batteries furnishing the current. The gasoline tank has a capacity of 10 gallons, and the car will run from twelve to twenty miles on a gallon, according to the condition of the road and the skill of the driver. Steering is by wheel, the gearing being enclosed in a dust-proof casing. There is a double-acting band brake on the driving sprocket, and emergency brakes are fitted to the rear hubs.

The Reo four-passenger runabout, which was illustrated in THE AUTOMOBILE for October 12, has an 8-horsepower single cylinder motor placed under the body, driving through a two-speed-and-reverse planetary transmission gear, heavy roller chain and live rear axle. As in other Reo cars, the cylinder has its head, jacket and valve chambers cast in one piece, and the engine has mechanically operated valves, jump spark ignition, automatic carbureter, tubular radiator and gear pump.

The body of the car rests on an angle steel frame supported on full elliptic rear and semi-elliptic front springs. Road wheels are 28 inches in diameter, fitted



REO 16-HORSEPOWER LIGHT FIVE-PASSENGER TOURING CAR FOR 1906.

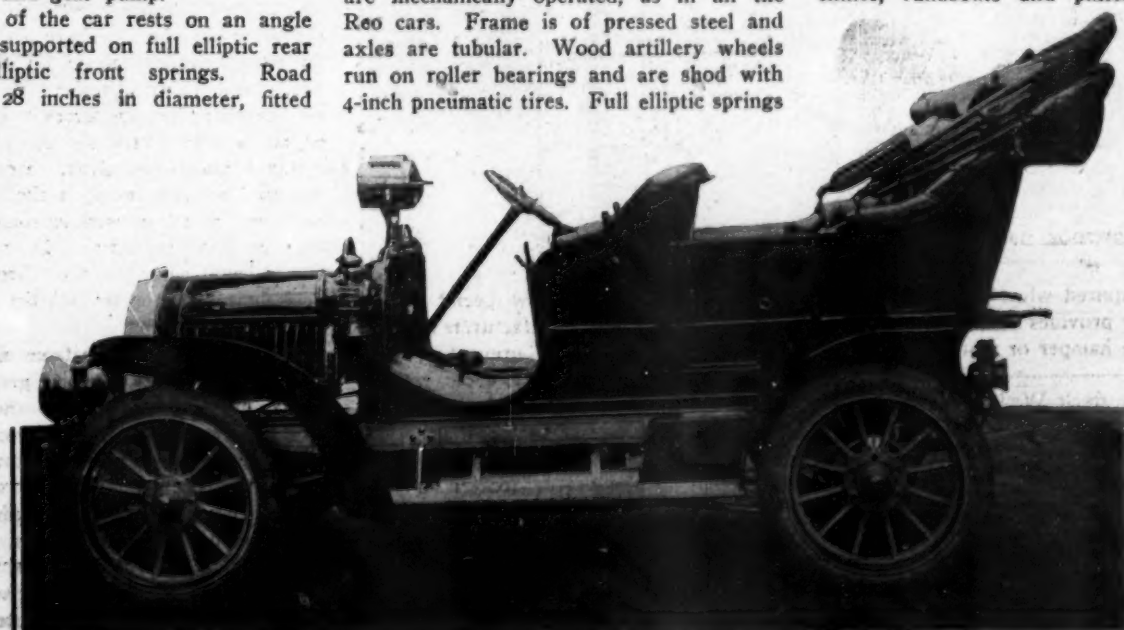
with 3-inch tires, and run on roller bearings. The car weighs 1,100 pounds, has a gasoline capacity of 6 gallons, wheelbase of 78 inches, and tread of 55 inches. A folding rear seat is a convenient feature; folding down out of the way when the car is to be used as a two-passenger machine, so that it does not detract in any way from the appearance of the machine. When it is desired to carry extra passengers, the seat can be raised easily and quickly.

The Reo ten-passenger gasoline 'bus, illustrated on page 470, is propelled by a 16-horsepower motor, having double opposed cylinders of 4 3-4 inches bore and 5 inches stroke, driving the live rear axle through a planetary transmission and a single chain. The transmission, like that of the touring car, has no internal gears, and revolves as one piece when the high speed is engaged. The engine is water cooled, the radiator being of the tubular type, and the water circulated by a gear pump. Valves are mechanically operated, as in all the Reo cars. Frame is of pressed steel and axles are tubular. Wood artillery wheels run on roller bearings and are shod with 4-inch pneumatic tires. Full elliptic springs

support the rear of the body, while in the front semi-elliptics are fitted. Wheelbase, 90 inches; tread, 55 inches; wheel steering; gasoline capacity, 13 gallons; speed, eighteen to twenty miles an hour. There is a double acting brake on the driving sprocket, and also band brakes on the hubs. The 'bus weighs complete, 1,700 pounds.

COLUMBIA MODELS FOR 1906.

Among the machines brought out for the season of 1906 by the Electric Vehicle Co., of Hartford, Conn., will be a new model 20-horsepower four-cylinder Columbia touring car. The two-cylinder car and the big 40-horsepower touring car will be improved in a number of details, the main features remaining unchanged. Nickel steel will be used freely in the construction of all three models. Among the electric vehicles manufactured by this concern will be light weight broughams, landaulets, hansom and victorias, all mounted on the same type of running gear. The lighter electric machines, runabouts and phaetons, will be



POPE-HARTFORD MODEL F FOUR-CYLINDER 16-HORSEPOWER CAR, WITH DUST DEFLECTING CURVE AT REAR.

practically the same as in the 1905 models. Electric trucks and delivery wagons ranging from the huge 10,000 pound beer truck to the light 1,000-pound delivery wagon, will be manufactured as heretofore. The company states that many orders for commercial vehicles of various types are already booked for 1906 delivery.

Maxwell 3,000-Pound Truck.

The wide field that is opening up to the commercial automobile has brought the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., into the market with an 18-horsepower gasoline truck on which the company's engineer and designers have been working for the past year. The main features of the new truck are similar to those of the Maxwell touring car, although such parts as have to bear extra strains are made heavier and stronger than in the pleasure car. The motor, like that of the touring car, has double opposed cylinders of 5-inch bore and 5-inch stroke, and the aluminum crankcase of the engine is prolonged toward the rear to form the casing for the multiple disc clutch and the three-speed sliding gear transmission. The same peculiar construction of the engine, with valve operating mechanism removable in a separate casing, and the ready accessibility and adjustability of the main and connecting rod bearings that characterize the Maxwell pleasure cars are retained. Babbitt lined bronze shells take the wear in the main engine bearings.

Framing, axles, knuckles, wheels, springs and other parts on which the weight of the load imposes extra stresses are made heavy. The rear axle, of the live type with propeller shaft and bevel gear drive, runs on



MAXWELL 3,000-POUND TRUCK DRIVEN BY 18-H.P. OPPOSED CYLINDER MOTOR IN FRONT.

roller bearings; a roller of the same size and bevel as the driving pinion is placed back of the large bevel gear, opposite the pinion, to take the thrust.

The platform body has a loading space 10 1-2 feet long and 6 feet wide; the normal load of the truck is 1 1-2 tons, but a maximum load of 4,000 pounds can be carried. With all tanks full, the vehicle weighs 2,600 pounds. Its maximum speed is eighteen miles an hour. The wood wheels are 32 inches in diameter, shod with Firestone solid rubber tires 4 inches in diameter on the rear wheels and 3 1-2 inches in diameter on the front wheels.

The Maxwell truck was seen in public

for the first time on the occasion of the Vanderbilt cup race, when a score of employees of the company were conveyed to the course in one of the new machines.

Details of Premier Racer.

The engine of the Premier racing car, built primarily for the Vanderbilt cup race, but debarred from the elimination trials because it could not be gotten down to weight in time, is illustrated herewith, and we are now able to give details that were not available when the picture of the car in an incomplete state was published on September 14. The builders state that the weight is now within the limit.

Briefly, the engine has four vertical cylinders with integral heads and valve chambers; cooling fins, of the familiar type, are cast on the cylinder barrels, the heads and the valve chambers. There are twelve fins on each cylinder; those on the cylinder heads and valve chambers run fore and aft, so that the air currents have a free passage between them. The bell cranks through which the valves are operated, are mounted on A-frames on the tops of the cylinders, as the illustrations clearly show. The camshaft is driven by bevel gears, power being communicated through a vertical shaft from the crankshaft. Valves are of large size, particularly the exhaust valves, which are 3 1-2 inches in diameter, the inlet valves being an inch smaller.

The cylinders are of 7 inches bore by 5 1-2 inches stroke, and are not bolted down in the usual way, but are suspended above the open aluminum crankcase by brackets cast on the cylinders and bolted to short columns rising from the arms of the crankcase. This feature also shows plainly in the engraving. Although originally rated at 80 horsepower, the builders, the Premier Motor Mfg. Co., of Indianapolis, now credit the motor with 100 horsepower.



REO TEN-PASSENGER 16-H.P. OMNIBUS DRIVEN BY DOUBLE-OPPOSED ENGINE.

The carbureter is an enlargement of the carbureter that will be used on the 1906 Premier touring cars. It has no springs and but one moving part in addition to the float. The proportions of air and gasoline are automatically controlled.

The clutch consists of a series of discs made from saw steel, half the discs being hardened and the alternate plates left soft. The soft discs are attached to the flywheel by steel studs, while the hardened plates have lugs which enter a keyway in the clutch shaft. There are twenty-one discs in all, each 9 inches in diameter.

A sliding gear transmission of the selective type gives three forward speeds and a reverse, a single side lever being used for effecting engagement. Drive is by propeller shaft having a universal joint just behind the transmission gear case.

A force-feed lubricator is driven from the crankshaft by a pig-skin belt running on flanged pulleys. Ignition is by jump spark, there being four vibrator coils on the dashboard. The distributor has wire gauze brushes held by springs in contact with a revolving copper cylinder, one segment of which is in electrical contact with the distributor shaft; mica is used for insulation.

Special shock absorbers are fitted to the frame of the car and consist of drums 5 inches in diameter with 2 1-2-inch face, bolted to the side frames and encircled by

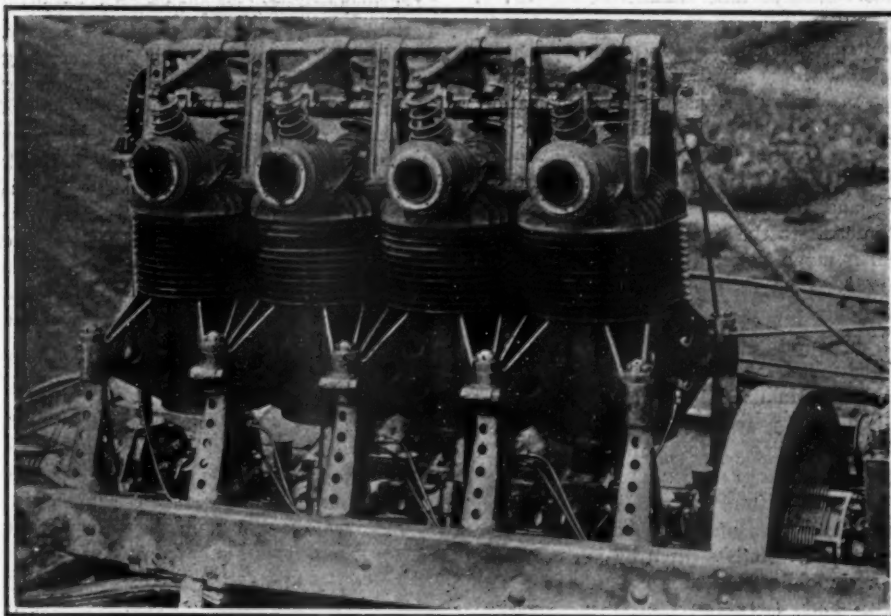
Testing Plant at Purdue.

Special Correspondence.

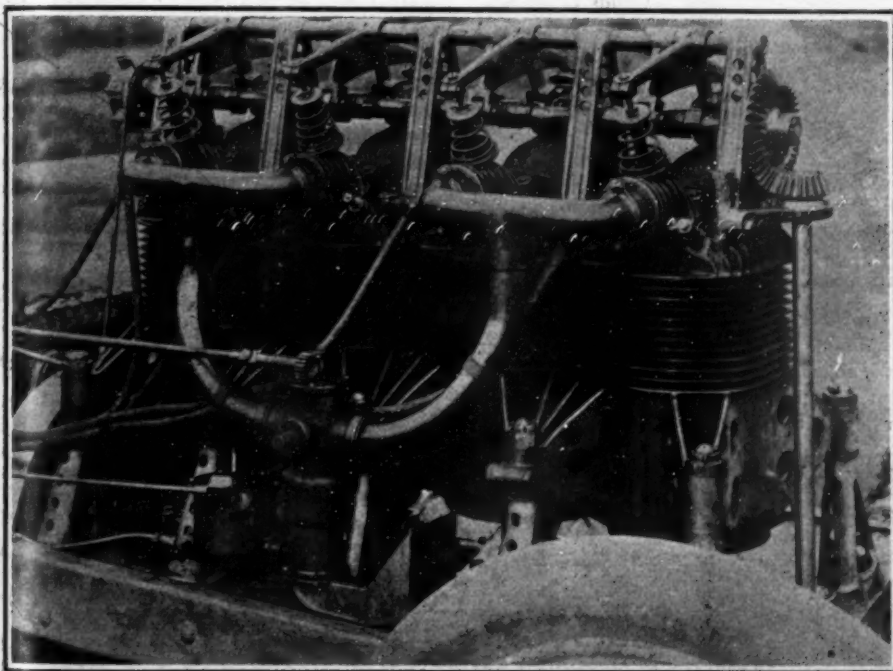
SOUTH BEND, IND., Oct. 23.—The new automobile testing plant in the mechanical department of Purdue University, at Lafayette, Ind., is now nearing completion, and experiments will soon begin. The object

veloped by the engine and a brake horsepower device will measure the net power output or power delivered at the wheels. This, with the amount of fuel consumed for a given time, will give the general efficiency of the machine.

The plant is complete in every detail, a heavy steel structure serving for a platform



EXHAUST SIDE OF ENGINE OF PREMIER RACER BUILT FOR VANDERBILT RACE.



INLET SIDE OF ENGINE, SHOWING CYLINDER SUSPENSION AND CAM SHAFT ARRANGEMENT.

leather-lined steel bands, connected to arms bolted to the axles. Screws are provided for adjusting the tension of the bands.

No cooling fan is employed, but the hood, which is not shown, has wind-catching wings that cause strong currents of air to play on the engine when the car is in rapid motion.

This car was entered for the race meet held in Indianapolis on October 25.

of the new department is to test the consumption of fuel, horsepower delivered at the wheels and general efficiency of machines under examination. The automobiles which will be delivered at the university, in running order, will be mounted on a stationary platform with the rear driving wheels resting on rollers that will revolve under the wheels of the car. A dynamometer will measure the power de-

upon which the automobile is to rest while the test is being made and machinery of the very latest design being used for thoroughly testing the motors. The work of erecting and equipping the department is under the supervision of O. C. Klipsch, a new man at Purdue, who was formerly with the General Electric Company.

The automobile testing plant will eventually be turned over to the members of the senior class in the school of mechanical engineering, who will conduct tests for their thesis work. They will test the various makes of cars and will have the co-operation of the engineering department.

NEW PUBLICATIONS.

Annuario del l'Automobilismo (Annual of Automobiling), 1905-1906; Italian Touring Club, Milan, Italy. Price, 2 1-2 francs (50 cents) for members; 5 francs (\$1) for non-members. This volume, in the Italian language, should prove of great value to automobilists touring in Italy. It contains the text of the laws and regulations for the circulation of automobiles in that country; all the custom house provisions in force in the principal countries of the world, for the temporary or permanent importation of motor vehicles, detached pieces and accessories; the provisions governing the transport of such vehicles on the Italian railroads, tramways and lines of navigation, and other information of the greatest value to the tourist. Much other data of interest is contained in the book, such as a complete list of owners of autos and motor-

cycles in Italy, with addresses; a list of Italian manufacturers and constructors of automobiles, motors for autos and boats, motorcycles, tires and accessories. A directory of dealers and agents of Italian and foreign manufacturers, and of garages and repair shops in the various cities is also given. These lists may prove of use to American exporters. In the second part of the volume the information is divided by countries, under the following heads for each country: (a) Legislation, circulation, custom house provisions, transportation. (b) Italian diplomatic and consular corps with each government. (c) Consular corps of the Italian Touring Club. (d) Automobile and touring clubs. (e) Publications of interest to the tourist. The present annual is much larger (732 pages) and more complete than its predecessors. The little volume measures 6 by 4 by 1 inch, and is of very convenient size for the pocket.

Manuale del l'Automobilista (The Automobileists' Manual), by G. Pedretti, second edition, 746 pages, 837 illustrations, published by Ubrico Hoepli, Milan, Italy, 1905; price, 8 lire (\$1.64). This Italian manual contains a fund of practical information for the practical automobilist, chauffeur or mechanic. It is written by an instructor on automobiles and motors—Engineer Pedretti—and is very thorough, covering every branch of the industry. It is copiously illustrated with line and halftone engravings. The first part of the volume is devoted to a history of the automobile, and the author then goes thoroughly into a description of the component parts. In subsequent chapters all the different types of automobiles are exhaustively described and illustrated. A clear and full course of instruction for the chauffeur and mechanic is also given, no pains having been spared by the author or the publisher to make the volume a complete *vade mecum* for the beginner as well as the experienced automobilist, inventor and constructor. The volume is up to date, and embraces the whole field, not excepting auto boats and motorcycles. This book should meet with a well-

deserved success in Italy, or wherever the Italian language is understood.

Plain Gas Engine Sense is the title of a little book intended for practical men whose business or pleasure brings them in contact with gas engines, which has been published by *Gas Power*, of St. Joseph, Mich. The volume, which is only 3.3-4 inches wide and 5.1-4 inches long, is devoted to practical matters, to the exclusion of ancient history, abstruse mathematics and uninteresting theories. Instructions are given for caring for and adjusting the various parts of gas engines, for making small repairs, finding causes of trouble, and so on, and the book is written in plain, easily understood language throughout. The author, E. L. Osborne, believes that the gas engine is the motor of the future, and expresses his opinions forcibly. The book contains 124 pages and a number of halftone and line engravings.

ONE SHIPMENT OF GASOLINE TRUCKS.

Every year sees a new and larger output of better and more serviceable commercial motor vehicles than the year before. Business men are becoming more familiar with their advantages and convinced of their economy, and manufacturers who are building good machines are gradually establishing a trade in a field that offers enormous possibilities for the future. Big concerns now order motor trucks a number at a time, instead of singly, as at first. The accompanying illustration shows five 3,000 pound trucks built by the Packard Motor Car Co., of Detroit, ready for shipment from the Packard factory to the Adams Express Co., in New York City. The Packard company states that difficulty is experienced in keeping abreast of the demand for commercial machines. Among recent shipments were three trucks sent to Central America, to be used on routes between the mines and the coast.

An international exposition will be held in Milan, Italy, from May to November, 1906, to celebrate the opening of the Simplon tunnel. A pavilion will be set apart for exhibits of automobiles. Information

regarding the exhibition may be obtained from J. H. Gore, George Washington University, Washington, D. C., or from L. S. Ware, 54 Rue de la Bienfaisance, Paris, France.

Government aid to highway improvement had its origin under Thomas Jefferson. President Madison endorsed it in one of his later messages to Congress. Henry Clay contended for it in a speech in Congress in 1818. John C. Calhoun, while Secretary of War, in 1819, strongly endorsed it in a report to Congress on roads and canals. The great Webster declaimed for it in a speech in the United States Senate in 1830. At St. Louis in 1903 President Roosevelt declared that the people had a right to demand this help from the general government, and on the same occasion, from the same platform, William Jennings Bryan declared that it was justifiable on a half dozen or more safe grounds, which he stated. In January last the Senate committee made a favorable report on the measure, and it would have passed but for want of time.

No man who has not visited Texas in recent months can even surmise the great change worked by the automobile. Why, the latter has now brought points more than a hundred miles distant from the railways into the closest touch with civilization. What used to be days of travel between distant ranches and railway stations is now merely a matter of a very few hours. Nearly all the ranchmen own their automobiles, and you can see them skimming the broad prairie in every direction, at times frightening the jackrabbits and the coyotes and striking consternation to the hearts of hoot-owls and rattlesnakes.—*Dallas (Tex.) News*.

The commercial clubs of Omaha, Neb., and Council Bluffs, Iowa, have decided to establish an automobile line between their respective cities with an advertising venture in view. The merchants will give coupons to customers, which will entitle the holders to free rides on the motor cars.—*Chicago Inter-Ocean*.



FIVE PACKARD GASOLINE TRUCKS READY FOR SHIPMENT AS ONE ORDER TO ADAMS EXPRESS COMPANY IN NEW YORK.

Letter Box

Autos Used by Department of Public Works on Staten Island.

Editor THE AUTOMOBILE:

[279.]—With reference to your communication, I am in receipt of a report made to me by William R. Hillyer, Assistant Commissioner of Public Works, in the Borough of Richmond, of the City of New York, to whom your letter was referred. Enclosed you will find a copy of Mr. Hillyer's report to me.

GEORGE CROMWELL,

President of the Borough of Richmond,
New Brighton, N. Y.

HON. GEORGE CROMWELL, President of the Borough:

Four automobiles are now in use by the city officials in your department. As THE AUTOMOBILE asks about machines used by city officials in our borough, I would state that there are several others in other departments (than the Department of Public Works), as to the behavior of which I am not sufficiently informed to make a statement; but of the four in use in your department, I would state that they are:

(1) One Oldsmobile runabout, of 4 1-2 horsepower, purchased about March, 1903. This, in spite of abuse through being handled by green men, has done as good service as can be expected of such a light power car. For purposes where a light runabout, corresponding to a horse and buggy, is required, the Oldsmobile, even with as light power as the old one which we now have, is undoubtedly a very handy and useful piece of equipment. This machine to date has covered about 10,000 miles.

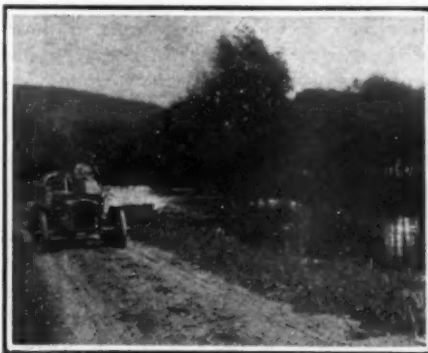
(2) One 16-horsepower, double-cylinder, air-cooled Knox touring car, of the model of 1904, which went into commission about June 1 of last year. Up to the present time the machine has run somewhere between 10,000 and 11,000 miles. It gets hard service, and has proven generally satisfactory. Considerable difficulty was experienced in the matter of rapid wear of the pneumatic tires on the rear or driving wheels, but during the early part of this summer we abandoned the use of four-inch tires and had larger rims put on the driving wheels and fitted with five-inch Michelin flat-tread racing tires. This seems to have about put an end to the tire trouble. The air-cooling feature of the Knox car is a good one, doing away with the danger of freezing, and by reason of this we were enabled to use the car as usual during a large part of last winter.

(3) In the latter part of 1904 a two-cylinder Queen 10-horsepower was purchased. The Queen is a good, substantial machine, very simple in construction, well designed, and, with proper handling, a good working vehicle.

(4) Our fourth machine is an Orient buckboard, of about 4 horsepower. It has been in use for only about two months. It is used by our engineer in visiting contract work, and although for its power probably does as much as could be expected, yet it is not a machine for the constant work and the heavy grades of our Staten Island roads.

The purposes of our machines are in general the supervision and inspection of outside work. The Oldsmobile was for its first year used by the Superintendent of Street Cleaning almost exclusively and for the most part constantly. During the remainder of the time its service has not been so constant, and yet there have been very few days when it was not in use for probably half the time for general inspection and supervision purposes.

The Knox car has as its most fixed use the transportation of the city paymaster, who one day each week covers a run of about fifty miles, in which he pays city employees at from a dozen to fifteen points. A great saving of money has resulted to



Along the Bank of the Pretty Pequest River at One of the Quiet Pools.

the city from its use, for the old custom, when the paymaster was dependent upon public means of transportation by the cars and trains, was to pay at but three or four points in the borough, in which case the men had to leave their work on pay day and go considerable distances to these points, whereas now, by the use of the touring car, the number of paying points has been largely increased, and the time lost by the men in meeting the paymaster has been reduced to such an extent that a saving in time estimated at about \$50 a week has been effected. During the remainder of the week the car is used for general purposes of inspection and supervision by the Borough President himself, the Commissioner of Public Works, and the various superintendents of bureaus.

In general, our opinion is that the use of the automobiles is far superior to that of horses for supervising officials, whose time must be divided between office duties and outside work, for although the saving per mile of the automobile over horse and buggy is not material when repairs are taken into account, still the increased amount of ground covered during a limited

number of hours a day and the increased number of points which may be visited by the supervising officer, makes the automobile method decidedly superior as to measure of increased efficiency.

With trained men to operate the machines so that they are not injured early in their existence by reason of green hands learning to operate them (which is often the cause of serious damage to the machine, from which it never entirely recovers), there is no question that automobile runabouts are an immense help in the economical and efficient carrying on of the inspecting and supervisory branches of public work.

As to additional machines in our department, none are definitely contemplated at present; but, in my opinion, it may become a matter of good judgment to equip all our inspectors of maintenance with runabouts instead of, as at present, either furnishing them with horses and buggies or paying them, as we do, an allowance each month for the use of horses and buggies.

WILLIAM H. HILLYER,
Assistant Commissioner of Public Works,
New Brighton, N. Y.

Through Delaware Water Gap.

Editor THE AUTOMOBILE:

[280.]—The photographs herewith were taken on a recent trip through the Water Gap and up into the valley of the Delaware, and the places will, no doubt, be recognized by many who have been over the same route.

The Delaware river is crossed at many places between Port Jervis and Easton by the type of ferry shown. It is simply a large raft with low sides. Running from a windlass at each end is a rope which terminates on an iron ring that slides on an overhead cable, stretched from shore to shore about twenty feet above the water. When the river is high and the current swift, the "bow" end of the ferry boat is drawn up stream by its windlass, thus placing the raft obliquely across the current, and the effect is to drive it rapidly across with no other aid. When the river is low,



Myers Ferry Across Delaware River at Delaware, Nine Miles Below the Water Gap.

the ferry is poled across in the ordinary way. The photo shows Myers Ferry at Delaware, about nine miles below the Water Gap. The banks on each side are steep and call for most careful driving to get aboard without accident. This is particularly true on the Pennsylvania side (shown in the photo) because of a very sharp turn just at the foot of the road.

One of the most beautiful features of this route is the Pequest River, which is followed closely for about nine miles. This stream presents quiet nooks and pools varied with rapids, and steep banks alternating with sloping, grassy shores.

Anyone who has once taken the trip will certainly anticipate its repetition with much pleasure.

E. H. B.

Newark, N. J.

A Case of Jersey Injustice.

Editor THE AUTOMOBILE:

[281].—A week or so ago a great deal of comment was created in the press by some extraordinary remarks made by Justice John Franklin Fort, of the New Jersey Supreme Court, in charging the grand jury at New Brunswick, in which he stated that he doubted that automobiles had any right whatever on the highway. This same justice capped the climax for motorphobia on the bench in charging a jury yesterday in a damage suit brought against me by William Addis.

The whole case is so unusual that I will give it here as briefly as possible:

On May 28 I was driving a 12-horse-power Packard car along Richmond street in Plainfield. The street was obstructed on the right side and a large, slowly-moving truck on the car tracks in the center made it necessary for me to pass to the left. As I was turning to the right side again I saw two bicycles coming toward me, and I signaled with my horn. Both riders looked up, and the first rider, becoming confused, turned to his left. I quickly turned to the left again, and safely passed the first rider. The second rider, apparently thinking I had continued passing over to the right, kept on at top speed. He had his head down and was looking backward at a lot of men who had just been paid off at the Scott Press Works and were calling to him. I signaled again, and, noting that a collision was inevitable, jammed on the brakes and threw car to right, stopping it in its own length and directly at right angles to the street. After the car came to a full stop the wheelman ran head on into the side of the rear wheel. He was thrown off and his wheel smashed. He got into the car with me, and I took him to the doctor's office. His finger was cut on the steel fender, and I tied this up with my handkerchief. After leaving him at the doctor's I went to the man's house and explained the accident to his wife. I did not admit any responsibility, but, recognizing the man as one who had worked at my shop, I offered to repair his wheel and pay his wages while his hand was disabled.

The man was back at work in a few days, and brought suit for \$1,000. His lawyer bungled several times in drawing his papers, and the case came to trial only yesterday, sixteen months after the accident.

The plaintiff on the stand contradicted himself on nearly every point. His witnesses either admitted that they did not see the collision or admitted that the car came to a stop before the bicycle ran into it. Plaintiff's doctor testified that the man was but slightly hurt, and a week or two after the accident had entirely recovered. One of the leading physicians of Elizabeth, Dr. Green, testified that the man was in perfect health, and showed no effects of the accident. Dr. Wilson, a noted eye specialist, as had Dr. Green, examined the man during the trial, in the presence of both counsel, and declared that the man's eyesight was unimpaired. No medical experts were called by the plaintiff.

I produced five witnesses who testified that the man was looking back and that the car had stopped, also two witnesses who testified that the man had told them immediately after the accident that he had never seen the car at all. None of these witnesses was contradicted except by the two witnesses whose testimony would, according to law, be thrown out.

The plaintiff's lawyer, W. A. Coddington (himself an automobilist who has lately figured in several bad smash-ups), made a most rabid speech against all automobiles, and went so far in his violation of common decency that three times the judge was obliged to stop him and rule that his remarks were highly improper.

Notwithstanding it was clearly shown that I was in no way to blame, the justice, in charging the jury, stated that while the law clearly provided that "at times the rider of a bicycle or horse-drawn vehicle must cross to the left side to avoid accident, or to pass a slower or stationary vehicle going in the same direction, there was no such law permitting an automobile to so pass to the left"; adding also: "If you find that the plaintiff was, as he had a perfect legal right to be, on the right side, then you must find for the plaintiff," thus clearly insinuating to the jury that it made no difference whatever that the injured man was grossly negligent himself.

Through a defect in the papers the judge was obliged to charge that the plaintiff could not recover for any permanent injuries, but only for loss of his bicycle and suffering up to the time of the filing of the suit. The jury brought in a verdict for \$500 for the loss of bicycle, a slightly cut finger and a week's wages.

This verdict is so grossly unjust and against the weight of the evidence, and the remarks of the judge were so entirely improper, that an appeal will be taken at once.

When we see our "courts of justice" in this manner turned into agencies for the collection of blackmail, and when our supreme court judges indulge in such un-

reasonable talk to juries, how can anyone have respect for the law?

In this case the whole argument against me was that I had acknowledged the liability by offering to help the injured man in his trouble by repairing his wheel, by tying his hand with my handkerchief, and by taking him to the doctor. How, in view of such a miscarriage of justice, can a motorist be blamed for going on his way and not stopping to help some careless fool who may negligently put himself in the way of a moving car?

I think that the plaintiff's lawyer in this case, a motorist, after becoming fully aware of the facts, is guilty of conduct such that every motorist should hold him forever in contempt.

S. W. RUSHMORE.

Plainfield, N. J., October 12.

Shaft Drive in Cup Race.

Editor THE AUTOMOBILE:

[282].—Although the different machines which participated in the Vanderbilt cup race have been pictured and described in all trade papers, magazines and dailies throughout the country, and the main features of the various types of car referred to, there is one feature, and an important one we think, which has been passed over entirely or given but slight mention. We refer to the transmission and drive.

In racing cars and high-powered cars the preponderance of construction has been on the side of chain and sprocket drive. The Packard company for some years has made a special point of its transmission and drive, and we think you will allow us the assertion that we stick at nothing and to nothing that we think would not be for the most perfect construction in a motor car. Early in the racing game we built the *Grey Wolf*, using shaft drive and bevel gears, and it made and held a number of records. Both the Darracq and the Panhard, which came in first and second in the race last Saturday, have shaft drive through bevel gears, the Darracq identically the same as the Packard, the transmission and bevel gears forming a single unit at the rear axle.

The fact that a light-weight, medium-powered car and also a high-powered car should show up so well under such terrific speed and strain only demonstrates the fact that there has yet to be devised a superior construction to the shaft and bevel gear drive, such as the Packard company is using and makes a special feature in its touring cars.

It is only natural that a builder likes to have his ideas proven correct by such test as was given the cars in the Vanderbilt cup race.

PACKARD MOTOR CAR COMPANY,
W. H. WORKMAN,
Advertising Department.

Detroit, Mich.

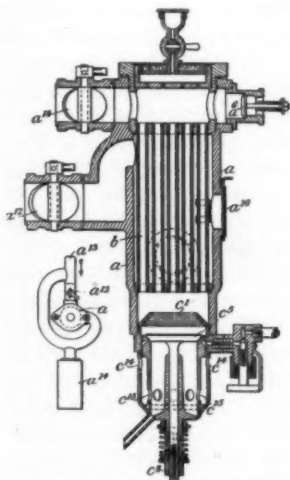
Rats have been known to develop a taste for tires, and have caused many mysterious deflations.

Patents

Kerosene Carbureter.

No. 800,777.—A. Westmacott, of St. Helens, Isle of Wight, Eng.

The air enters by the openings c^1 , c^2 , and, passing upward, lifts the valve c^3 and draws kerosene spray from the openings in the valve seat. This spray is broken up on the rough inner surface of cone c^1 , and is evaporated by passing through the tubes b , which are surrounded by hot exhaust gases. The mixture passes out through the throttle valve a^1 . The small valve a^2 opens automatically when the speed of the engine becomes excessive, thus acting as a sort of governor by diluting the mixture and causing the engine to slow down. The exhaust gases enter by the regulating valve a^3 and



WESTMACOTT KEROSENE CARBURETER.

pass to the muffler by the dotted outlet a^4 . Shutter a^5 may be opened to heat the tubes with a torch for starting. The small view at the side shows the piping arrangement. The gases enter at a^6 ; a is the carbureter and a^7 the muffler.

Flywheel Clutch.

No. 800,564.—L. E. Gibson, of Kokomo, Ind.

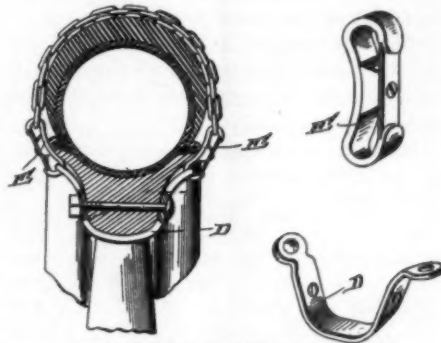
A cone clutch engaged by the thrust of a set of toggles acting between the male member and the shaft, which is extended through the flywheel. The toggles are straightened by forcing a ring or sleeve over them, thus engaging the clutch.

Ignition Timer.

No. 800,418.—R. Varley, of Englewood, N. J.

An improvement on another device of the same inventor, consisting of a timer having separate cams for contact making and breaking. The two cams are advanced differentially, the breaking cam more slowly so as to increase the arc of contact for high speeds. The improvement is based on the theory that an early spark is sometimes

preferred with slow speed, when the latter is the result of throttling or of a heavy load. To accomplish this result the breaking cam is arranged to be operated in connection



SMITH TIRE CHAIN FASTENER.

with the throttle when desired, to give a short arc of contact under such conditions with the spark fully advanced.

Tire Chain Device.

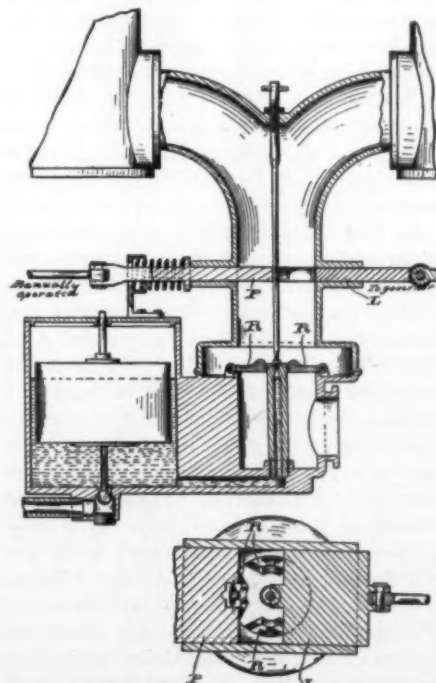
No. 801,115.—W. J. Smith, of Canastota, N. Y.

The yokes D are bolted to the felloe at intervals, and the snaps E hold the chain to the yokes. The chain is passed zig-zag across the tire from one yoke to the next, and may be removed when not wanted.

Carbureter.

No. 800,647.—W. A. Hatcher, of Cleveland, O.

An automatic carbureter having special means for varying the area of the air passage around the spray nozzle, according to the velocity of the air stream. The means consists in a "flap valve" R , divided radially into four separately-hinged parts, as shown in the plan section. These are



HATCHER AUTOMATIC CARBURETER.

lifted to a greater or less extent by the air current, giving a wide opening at high speeds and *vice versa*. The plan section is taken through the throttle valve, which is in two parts—one, P , operated by hand, and the other, L , by the governor. The throttle can, if desired, be entirely closed, and the hand portion can be operated to give—as shown—more than a semicircle of opening independently of the governor.

Muffler.

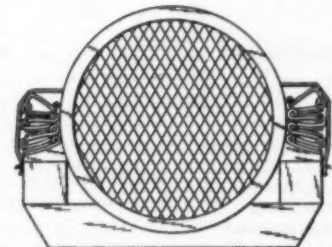
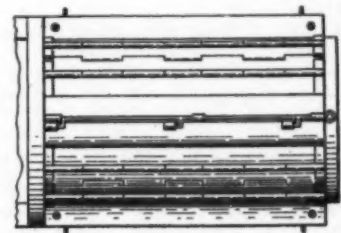
No. 797,681.—E. P. Gray, of Cincinnati, Ohio.

A muffler with cut-out, automatic relief, and whistle attachment for road signals.

Folding Motor Hood.

No. 801,155.—H. Raphael and E. D. Toops, of Indianapolis, Ind.

A hood made to open at the middle of



RAPHAEL AND TOOPS FOLDING HOOD.

the top, and having the two halves jointed or hinged at short intervals, so that they may be folded as shown in the lower view. The fastener for joining the two halves is shown in the plan view. The hood, as shown, is adapted especially for application to the National cars, built in Indianapolis.

Motor Truck.

No. 798,926.—C. Schmidt, of San Francisco, Cal.

A truck having the platform hung very low, the axles being dropped for the purpose. The four-cylinder motor is placed fore and aft, and through a propeller shaft drives a cross countershaft under the platform just forward of the rear axle. Sprocket chains running up to the rear wheels complete the drive. To permit the platform to be spring-supported, the countershaft is carried in a frame attached to the axle instead of to the platform. A system of spiral and bevel gears transmits power also to the front wheels from the front end of the motor shaft, and steering is by a fifth wheel or turntable. No speed-changing gear is shown, as the invention is not limited to gasoline motors.

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Road Race or Touring Competition?

Coming at a time when the question of the absolute abandonment of road racing in favor of touring competitions is under discussion abroad, the present situation in this country presents some serious problems. The overshadowing prominence of France in automobile racing, and the fact that American racing thus far has been modeled upon French lines, have led many to the conclusion that road racing has had its day here as well as abroad, and that the time has come when it should finally be abandoned in favor of other forms of competition. That such races as those for the Vanderbilt cup in 1904, and again this year, are of no real benefit to either the general or the trade interests of the automobile, is now as plainly evident as are the beneficial effects of touring competitions when well managed; but it does not follow from either proposition that no good whatever may be derived from road racing.

If it were a question of absolute choice between touring on the one hand and racing on the other, the decision would be an easy one; but no such issue exists. Automobile touring in all its forms has attained to a popularity that assures its permanence, and the particular form under discussion—of a long tour with a system of point scoring—promises to become more popular each year, as cars of moderate price are per-

fectured to a degree which makes them suitable for this work. There need be no fear that a continuance of road racing will interfere with the touring contests, as the two appeal to entirely different classes so far as principles are concerned.

With or without racing, touring is certain to continue, bringing good results of its own; but at its best it falls short of racing in certain respects.

However interesting the competition may be to the participants, and however fruitful in results in the form of reliable data on fuel, tires, etc., touring can never appeal to the public in the way that a great race does, and it can never serve as a great awakener and advertiser of the automobile. It may be claimed that much of the interest in a road race is fictitious, sensational and incidental, but at the same time experience has proved that public contests of this kind serve a good purpose in the way of awakening outside interest as well as in stimulating the ardor of competition among those directly concerned.

It is a waste of time now to argue whether or not racing should be abandoned, when the real question is, "How can the greatest possible good be derived from racing?" This latter question involves many points; the general management, the specific conditions, whether the contests shall be national or international, and others of minor importance.

It goes without saying that the management of racing should be in the hands of some one national body, as local bodies are unable to deal properly with national or international interests. The present situation is that the national body, the American Automobile Association, has in the conduct of the last race so impaired its prestige that it no longer retains the respect of possible competitors. It may be that a radical reorganization, placing the control of racing in a small committee of picked men in place of the present large and unwieldy one, will effect the necessary reform. At the present time, others stand ready to assume the control of racing, and it is evident that some prompt and radical action is necessary.

So long as the highest speed obtainable in a road race was no greater than that permitted by law, there was no need of any restrictions on the car; but while the racing speed has risen to fifty, sixty, and even ninety miles per hour, the only limit imposed has been a total weight of 1,000 kilograms. Even the nominal relation between the racing machine and the fastest of touring cars has disappeared, and until this relation is restored, no further good can be derived from racing.

There can be no doubt that a road race will be held near New York next fall, and this brings up the important question as to whether for the present and for some time to come such races should be national or international. It is plain that at the present time America has no chance of success

against the best cars and drivers of France, Germany and Italy. It is urged on the one hand that our progress will be more rapid, and the immediate results, at least more gratifying to national pride, if all foreign competitors be barred. On the other hand, there are those who contend that the only way to that world-wide success which alone can be thoroughly satisfactory to Americans is through continued competition with all rivals, even though the present rather mortifying results should continue for several years more.



Racing Under Technical Limitations.

That road racing as now carried on in this country has been very generally condemned is in no way extraordinary when the rules are considered. These are essentially of French origin, and consequently are based upon certain conditions attendant upon the development of the automobile in France. Most important of these is the excellent character of the Continental roads, permitting a high average speed in ordinary touring and inviting the development of extreme speeds in racing. Even the most powerful of the new cars can be run continuously at something near their limit on the average road.

Another thing that has aided the French constructor is the generous patronage of wealthy motorists, orders being freely placed in advance for racing cars, while those which have established their reputations find a ready sale at high figures after international contests. With every inducement to attain a higher speed in the great road races, the French manufacturer was quick to realize the value of high-grade materials and was liberal in his search for them, the most expert chemists and metallurgists being called to his aid, with results which are well known.

It is an open question whether the turning point was reached in the fatal Paris-Madrid race in 1903, or a year later, but prior to it road racing was the main factor in the development of the French touring car. That its value to France has disappeared is now freely conceded by all, and it is rapidly giving way to another class of competition.

The conditions of automobile development in America are diametrically opposite to those of France; in the first place, the roads throughout most of the country are uniformly bad; the exceptions in certain favored sections being but an immaterial proportion. There is no requirement for high-speed cars and no place for their use, the requirements being for durability and reliability, with speeds not materially over the legal maximum.

The demand on which the manufacturer must rely is not for racing cars, but for reliable and efficient touring cars of moderate speed, and the ambitious manufacturer who aspires to racing honors must rely upon his

own bank account, with the knowledge that he faces a heavy loss if he fails and no chance of a wealthy buyer for the car if he wins. That an American car has at last scored a place in an international race is due to one wealthy man, who was willing to risk a large outlay for a small prospective return; but such are too few to be counted as factors.

The history of automobile racing in France, its growth and decline, is invaluable as a guide at the present time, and by it the line of most desirable development may be clearly discerned. Avoiding before it is too late the mistake of France, a definite and permanent relation should be established between racing and touring cars. Much must be conceded in certain ways to the requirements of speed, and the way should be left open for a wide range of experiment; but all this may be done within the very simple and practical limits proposed by MR. S. D. WALDON—weight of car and piston displacement. Where speed without limit to engine power means nothing from a technical or economic standpoint, speed within reasonable limits of weight and power is a direct evidence of progress.

In establishing a class under these limitations, it is most important that in general conditions it shall be brought into the closest possible conformity with existing shop practice. The success of one special car, which is practically built in the tool room, never will be accepted as evidence of the standard of practice throughout a shop. The conditions should be such as to favor the car that can be built—of special design in parts and of high-grade material—without disarranging the regular factory output, relying to the greatest extent possible upon the standard jigs, gauges and templates. Built under these conditions, the victory of a car in speed and endurance in a road race means that essentially the same qualities will be found in the sister touring car.

Under existing conditions the winning of a big road race is little more a matter of engineering skill than of audacity in handling excessive power, combined with success in the choice of materials and in other ways. Under such restrictions as suggested, all makers start on equal terms as to weight and power, and it is purely a matter of brains and skill in utilizing equal opportunities to better advantage.

Far from losing interest, racing under such conditions would be quite as exciting as at present, and the results, instead of being useless, would be of direct practical value.



Accessibility of Parts

The production of a successful automobile *a Sine Qua Non* calls for an amount of skill that is best appreciated by those who have tried it. The designer must not only proportion the various parts so that they will work together harmoniously and efficiently, with the greatest durability com-

VANDERBILT RACERS SAIL FOR HOME.

Foreign Drivers Banqueted Before Departing—Hemery Disqualified in Italy and France for a Year—Speculation over Next Year's Race Follows News that France Will Decline the Cup.

The second Vanderbilt cup race has passed into history; the 28-mile course on Long Island is being allowed time to cool off; and the drivers of the racing machines have dispersed, taking their cars with them.

A spectacular incident, but fortunately one that did not result as seriously as was at first believed, followed the accidental ignition of some spilled gasoline under the winning Darracq car, which Hemery, the driver, was cleaning the day after the race preparatory to taking it apart and shipping it back to France. There was a sudden fierce blaze which enveloped the car, scorching the woodwork, tires, wiring and seat cushions. There was little to burn, however, and the use of buckets of sand and fire extinguishers soon put out the blaze. That the damage to the machine was slight was proved when, the following day, the car was driven twice around the course.

Hemery is in more serious misfortune, however, for following the finish of the Florio cup race in Italy, in which he took fourth place, he became involved in a dispute with the timers, and as a result of his remarks was disqualified by the Automobile Club of Italy from racing in that country for one year. This action has since been indorsed by the Automobile Club of France, so that the daring driver of the little Darracq will not be allowed to race in either Italy or France until the latter part of next season. The A. A. A., being affiliated with the A. C. of France, will have to suspend Hemery from racing in America also.

A dinner was tendered to the contestants in the cup race by W. J. Morgan on Wednesday evening, October 18, the festivities

being held in the quarters of the New York Press Club, at 116 Nassau street, New York. Lancia, Nazarri, Szisz, Chevrolet, Sartori, Cedrino, Duray, Warden, Tracy, Dingley and Christie were present. Letters of regret from W. K. Vanderbilt, and Foxhall Keene were read. The menu cards bore a picture of the Vanderbilt cup filled with champagne bottles. Gold watch fobs, bearing on one side a representation of the cup and on the other the seal of the New York Press Club, were presented to the guests.

Duray, Szisz, Hemery and Wagner of the French team, Jenatzy of the German team, and Baron A. de Turckheim of the Automobile Club of France, sailed on Thursday, October 19, on the steamer *La Savoie* for France. Heath will remain in this country for several weeks. Lancia and Nazarri, of the Italian team, took a trip to Niagara Falls before sailing for their native land on Saturday, October 21.

In view of the avowed intention of France to abstain from international automobile racing, many conjectures are being made as to what will become of the Vanderbilt cup. All this is merely speculation, however, as until an official statement has been received from France no one can know what will be done. It seems assured, however, that there will be a road race in the United States next year. E. R. Thomas, the automobile manufacturer of Buffalo, whose racing car was one of those which qualified in the Vanderbilt cup elimination race but was rejected by the cup commission, has offered a cup valued at \$2,000, and to be called the "Home Industry Cup," to be raced for by American cars only, under road racing conditions. Mr. Thomas plans to have the rules drawn up by a committee consisting wholly of manufacturers. This committee will select a second committee, consisting of men who are not interested, directly or indirectly, in automobile manufacturing, to manage the race, including the selection of cars and all matters pertaining to the contest. By limiting entries to American machines, Mr. Thomas hopes to stimulate competition that will develop car construction in this country as it has abroad.

bined with the least weight, but he must also arrange them in such a way that the necessarily frequent examinations and the occasional repairs and adjustments that all automobiles require can be made quickly and easily. The skillful designer can assemble his machinery compactly—in fact, he must make the best of the limited space at his disposal—and at the same time place every bolt and nut of importance, and every working part that is likely to require inspection within easy reach so that the chauffeur will not be tempted to neglect a trifling fault because of difficulty in reaching the seat of trouble.

It is well known to automobile users that a small defect or derangement in a gasoline engine or in the gearing or bearings of a car almost invariably grows worse if neglected instead of disappearing; and obviously the most sensible way to prevent neglect is to make the remedy as easy as possible by providing means for quickly reaching each part. It is not possible, of course, to make all parts equally accessible; nor is this necessary. Those working parts that are subject to the greatest wear and strain should be the first consideration, and

the engine as a whole naturally calls for the greatest care. In case of a sudden and apparently inexplicable stoppage of the engine the valve must be examined, the ignition tested, camshafts and springs inspected in order to get a clew to the cause of the stoppage; and such a process is a simple matter where all the parts are within easy reach. When the trouble has been found, it must be remedied; and this is rendered as easy as possible by making the removal of the affected part a simple, straightforward piece of work not requiring the disturbing of other parts before the one wanted can be reached.

A car that is well built of good materials but is so designed that the removal of one vital piece necessitates taking down others, is less desirable from a practical point of view than a machine that is not quite so well built but whose parts are easily got at for quick adjustments and little repairs. Attention to the small needs of the car counts for a great deal in the long run, and, per contra, neglected squeaks, knocks and grinds are apt to develop and cause serious damage, all the more exasperating because unnecessary.

PLANTED A "DEAD-MAN" IN THE DESERT.

Megargel and Fassett Find a New Way Out of a Hole in Idaho.—They Find Sand Tires Their Salvation in the Lava Desert and Meet Old Acquaintances at Hailey.

Special Correspondence.

MONTPELIER, IDAHO, Oct. 5.—To-day and yesterday we crossed the worst mountains we have thus far encountered—the Bear River Divide and Sublette ranges of the Rocky Mountain system. Our gradometer upon several occasions touched 40 per cent., and Fassett says it registered only half enough. Our little car, loaded down until the springs touch, struggled gallantly to the top of every ridge, and although our brake leathers were on fire three different times, we reached the bottom of every mountain range right side up.

Wednesday night found us at Diamondville, Wyoming, 7,000 feet above sea level according to our barometer. It was at this point that my companion, Stanchfield, gave out on my last transcontinental tour, the extreme high altitude bringing on mountain fever. My present assistant, Fassett, although suffering from a severe cold, is still in pretty good health, and it looks as though he would last out the trip, although he doesn't appear to enjoy the snow any better than I do.

At Bitter Creek station we crossed the creek in water only a few inches deep, but it rained that night and Bitter Creek arose to the occasion—from three inches to nine feet in less than twenty-four hours. As we had to cross the stream again to resume our journey, we were laid up just four days waiting for the water to go down; then it fell almost as rapidly as it rose. We crossed in two feet of water, using our cable and a friendly sage bush root. Five miles further down, toward Rock Springs, we came to a place where a sandy canyon had been washed out to a depth of twelve feet. This held us up six hours more, and eventually we crossed on two railroad ties—pretty narrow, but accomplished safely.

From Rock Springs to Green River was an easy run, and Granger, the terminus of the Union Pacific—or, rather, the junction of the Union Pacific and Oregon Short Line—loomed in sight a few hours later.

All day to-day we have been running through sage brush as high as small Christmas trees. The stalk at the bottom of these bushes frequently measures seven inches in diameter. Sage grows on either side of the trail, and in the middle of it, also. It is very hard on copper pipes, this constant rubbing against these heavy bushes; and unless protected, the entire piping will be torn out.

Towns where gasoline can be had are many miles apart in this section, and we have had iron hoops bolted to the side of the car, which allow of the carrying of three five-gallon cans of extra fuel. Gasoline in these parts always comes in five-gallon tin cans, two cans to the case. This is put up by the Continental Oil Company, a branch of the Standard Oil Company, and sells for anywhere from 40 to 75 cents a gallon, according to how much profit the storekeeper wants to make. It costs him wholesale about 32 cents a gallon. According to an arrangement made before we started on our present trip, Mobile Oil No. 4 awaits us every 100 miles. This does away with all annoyance in this respect, for nothing hinders an automobile tour more than running out of lubricating oil.

We planted our first "dead man" last Monday—not that we have been killing anyone, but a "dead man," according to western dialect, is a piece of timber or iron so placed in the ground that a rope or cable can be fastened to it, where it would be impossible to plant a post, even if one were handy. A shallow trench is dug across the road and the stick laid in it, with the rope tied around the middle. The trench is then covered with dirt, and the "dead man" will resist a strong pull on the rope. We didn't dig the grave deep enough first time, and when the cable had been attached and we commenced to wind on the windlass Mr. Dead Man rose to the occasion and came flying back at the machine. The next time we dug the grave about eighteen inches deep, and he stayed planted until the *Mountaineer* had been hauled out of the ditch and approached to within a few feet of the grave.

ARCO, BLAINE CO., IDAHO, Oct. 11.—After a most successful eight-hour trip across the lava desert, during which we encountered neither man nor water except at the Murray ranch, near Big Butte, we arrived here late last night.

As souvenirs of our day's run we brought in with us the pelts of two coyotes, shot

some of them eastern men out for sport and some of them western men out for gain. They are all glad to see the *Mountaineer*, and when stopping for a meal or a chat we are always treated as welcome guests.

At Pocatello there were two automobiles in use on the streets, and at Hailey there are three in use; so no matter how remote the towns, the automobile is no longer a stranger, although our *Reo* is the largest car that has ever been seen in these Idaho settlements, all the machines owned out here being runabouts of limited horsepower.

It is expected that Portland will be reached about October 20, although this will depend entirely upon the depth of snow encountered in crossing the Cascades—the highest mountain range.

HAILEY, IDA., Oct. 16.—Our route from Arco to the town of Hailey brought us through the most mountainous region of the state, and hill after hill, whose tops touched the clouds, was mounted by the little touring car.

Our first night out was spent at Cottonwood, the ranch at which Dr. Jackson put up when he came across in the Winton two years ago and where Stanchfield and the writer stayed over night on our



REO "MOUNTAINEER" FITTED WITH SAND TIRES IN THE LAVA DESERT.

while crossing the lava. Had we had a little more time we could have brought in some bear skins. Deer and antelope were also seen, but the law in Idaho protects antelope, and make it a serious affair if an outsider is caught shooting deer without a license and accompanied by a licensed guide.

It was with some misgivings that we started to cross the desert, for had any part of the machine broken down it would have meant a walk of anywhere from ten to thirty miles before aid could be secured, and then an equal amount of time would be consumed in returning to the machine with aid. That meant at least three days on the desert for the man remaining with the machine. We were well supplied with water and food, however, before starting, as we well knew the dangers of desert travel.

From Arco we go to Hailey, the next settlement, about 100 miles across country, with ranches every ten to fifteen miles. This is the wildest country in the west, and abounds in game and fish. Frequently we pass the camps of hunters and trappers,

transcontinental in *Old Steady*. Mr. and Mrs. Drake recognized an old acquaintance when the *Mountaineer* came puffing up to the door, and the good woman at once made preparations for supper, her meals being famous throughout this part of the state. After supper our host entertained us with bear stories, for before he took up ranching he had made his living for years hunting and trapping. He has a record of 240 bears in one year, trapped and shot in Colorado when that state paid a handsome bounty on bears.

Hailey is surrounded on all sides by high mountains whose tops are covered with snow to the depth of several inches. But this is nothing to cause alarm, as they frequently show snow in July and even August. Although the town has only about 1,200 inhabitants, it supports two daily papers and two weekly publications, the editors of which ran out after our car to secure the leading news item for the day's edition.

Rich mineral mines are located in all the surrounding hills, and the *Reo* encountered the best roads she has struck west of

Omaha, and the inhabitants are proud of their good roads. Four, six, eight and ten-horse wagon trains, loaded with all the necessities of life, are passed every few miles, while other outfits are loaded with ore for one of the several smelters.

PERCY F. MEGARGEL.

AUTO BOARD'S REPORT.

Recommends that District of Columbia Copy State Registration Clauses.

Special Correspondence.

WASHINGTON, D. C., Oct. 23.—More than ordinary interest attaches to the second annual report of the automobile board of the District of Columbia, just submitted, for the reason that it contains a number of recommendations which, if adopted by the District commissioners, will make the automobile regulations in Washington more onerous than ever.

The board recommends that hereafter a fee of \$1 be required for registration and assignment of an identification number, and that a similar fee be demanded for each permit issued, such fees to include seal and badge mentioned elsewhere in the report.

It recommends that the commissioners adopt this new regulation: "That on the assignment of a permit number to an automobile the secretary of the automobile board shall issue and deliver to the owner of such motor vehicle a seal of aluminum or other suitable metal, which shall be circular in form, approximately two inches in diameter, and have stamped thereon the words 'Registered Motor Vehicle, District of Columbia,' with the registration number inserted therein, which shall thereafter at all times be conspicuously displayed on the motor vehicle to which such number has been assigned. Upon the sale of said motor vehicle the vendor shall report immediately such sale and return the registration seal affixed to such motor vehicle, and, further, that all motor vehicles owned and operated in the District of Columbia be required to procure and display such registration seal."

With a view to keeping chauffeurs in check the board recommends that an aluminum badge hereafter be issued to such non-owners or chauffeurs, the badge to be stamped with the words "Registered Chauffeur, No. —, District of Columbia," which must be worn in a conspicuous place on the clothing, and which must not be transferred.

The report states that the recently adopted regulation requiring professional chauffeurs to file certificates of good character, indorsed by three citizens, has been of benefit, those to whom permits have been issued being, in the majority of cases, careful to observe the regulations.

The statistical part of the report, which is for the fiscal year ending June 30, 1905, shows, among other things, that during that period 667 applicants were examined, to all of whom permits were granted to operate automobiles within the District. Identification numbers were issued in 468 cases, while numbers were authorized to be transferred from former owners of 168 machines to new owners. Touring permits to sixty-eight owners from other states were granted during the year, as follows: New York, 26; Massachusetts, 13; Pennsylvania, 10; Maryland 9; New Jersey, 7; Ohio, 2, and Connecticut, 1. Of the 468 new cars registered during the year, 137 were electric, 393 gasoline, 109 steam, and 28 motorcycles.

The regulation allowing non-resident automobilists to operate their cars in the District of Columbia for a period of sixty days without registering them was favorably commented upon by everyone who secured the privilege.

KANSAS CITY LAW IS HELD INVALID.

Circuit Court Judge Condemns System of Examination and Licensing, and Says a Person Cannot Be Made a Witness Against Himself, but He Upholds Vehicle Tax on Autos.

Special Correspondence.

KANSAS CITY, Oct. 21.—In the circuit court here recently, Judge Brumback declared unconstitutional the city ordinance regulating the speed of automobiles and providing various regulations regarding them. He also issued a temporary injunction enjoining the city authorities from enforcing the ordinance.

The ordinance permitting the imposition of a yearly vehicle tax of \$5 on each car was upheld. The Kansas City Automobile Club had attacked the vehicle tax on the ground that the ordinance provides only for the taxation of carriages and vehicles, and does not specifically mention automobiles. Judge Brumback held that motor cars might properly be included under the term "carriages," as the ordinance in no instance names the motive power of any vehicle.

As to the speed ordinance, the judge held that certain of its provisions were unreasonable, oppressive and unconstitutional in not affording equal protection in law. He held, however, that the city had the right to pass an ordinance regulating motors, but said it must be so drawn as to be constitutional.

The feature of the ordinance providing for the examination of operators was held unjust, in the following words:

"The examination provided for does not distinguish between operators in charge of different classes of cars, and the board may require a person desiring to operate an electric automobile to pass an examination upon a steam engine, or vice versa, as but one kind of license is provided for; and another person who, by the favoritism of the board, may be examined upon an electric automobile, which requires simply knowledge enough to steer it, may, by virtue of his license, run a high-powered, dangerous machine of another character. I cannot regard any such arrangement as affording any reasonable protection whatever to the public."

Objection is also made by the judge because the board of licensing examiners is not composed of persons having any skill to judge of the qualifications of operators.

On the rights of the city to require an examination, the opinion says:

"I cannot but agree with the contention of counsel for the plaintiff that the city has no power to require operators to qualify. I consider it plainly apparent that high-power vehicles operated by the dangerous agencies of gasoline and steam or high-speed vehicles (?) operated by electricity are sources of danger in the hands of persons not properly trained, and that skill and experience may properly be required of operators thereof."

Regarding the section of the ordinance which requires the operator of a car to stop when this is demanded by the driver of a horse, the court says:

"It makes a person lawfully entitled to the use of a highway, subject without appeal, to the whim and caprice of some other person."

"The provision of the ordinance that, upon any accident happening it shall be the duty of the operator of the automobile to come to a full stop and give the owner or person injured or person in charge of the vehicle a card with his name, license and

number written thereon, appears to me to be a plain attempt to make a person a witness against himself, and is therefore unconstitutional."

TO SUPPRESS AUTO THIEVES.

Special Correspondence.

MINNEAPOLIS, Oct. 21.—A meeting of automobile owners of this city is soon to be held at the Commercial Club to discuss means for putting a stop to an annoying practice of practical jokers, who think it great sport to "borrow" a friend's auto when they find it standing by the curb unattended in the public street. It sometimes happens that the machine temporarily appropriated does not belong to the friend, but is a car of the same make owned by another. Besides the practical jokers, there are some automobile thieves in the city, and it is not easy to distinguish between them.

It is proposed to levy an assessment on the car owners and employ a detective whose services can be secured without additional cost by any member of the proposed association who has his car taken.

HOLD UPS AROUND ALBANY.

Special Correspondence.

ALBANY, Oct. 23.—Several Albany automobile owners who have toured across the river in Rensselaer and Columbia counties and in western Massachusetts, have had some exciting experiences recently with horse owners who have held them up with revolvers to compel the drivers of the cars to stop while the farmers' frightened horses were led past. Automobilists have also had trouble with constables and local justices over in Massachusetts, who have arrested them and fined them \$25 for violating speed laws. One justice told an Albany motorist that the residents had to pay for the roads in Massachusetts and proposed to make autoists from out of the state pay handsomely for using them.

OPPOSED TO GOOD ROADS.

Special Correspondence.

CHAMPAIGN, ILL., Oct. 23.—The farmers of Mahomet township, Champaign county, Ill., have organized the Mahomet Anti-Hard Roads League, with sixty-five members, all of whom have pledged themselves to vote for no candidate who is in favor of state aid for highway improvement. This unique association is formed almost in the shadow of the University of Illinois, an institution that has stood in the forefront of the good roads movement that still lives in the state. In this case there seems to have been no parleying between Mahomet and the mountain. Mahomet moved right over of his own will.

SHOW SPACE IN DEMAND.

The management of the Automobile Club of America show, to be held in the new Sixty-ninth Regiment Armory, New York, next January, announces that more than 45,000 square feet of space has already been applied for. The drill hall, or main floor, will be used for pleasure cars; parts and accessories will occupy the galleries; and the commercial cars—trucks, delivery wagons and so on—will be placed in the basement. The building will be fireproof throughout, a fact that will have a very beneficial effect on the insurance rates. Owing to the arrangement whereby one-third of the net profits will be divided among the exhibitors in amounts proportionate to the spaces taken, it is anticipated that the total outlay of each exhibitor will be considerably reduced.

TESTS MUST BE APPROVED.

N. A. A. M. Resolution Meets Approval of Members.

Replies received by mail from members of the National Association of Automobile Manufacturers indicate that they heartily approve of the following resolution adopted by the executive committee on October 6:

"RESOLVED, that this association is opposed to the holding of contests which have not been approved by its executive committee, and that it shall not be permissible for any member to take part in any such unapproved contest under penalty of being debarred from participation in such events as may be held with the approval of, or under the auspices of, this association."

The committee is now further sounding the sentiments of the members along the same line for next year in a circular letter propounding the following inquiries:

"1. Are you in favor of the adoption of a resolution requiring members to refrain from participating in road contests, such as competitive tours, endurance tests, economy tests, etc., which have not been approved by this association?"

"2. Do you favor a penalty for the infraction of such a rule, if passed; for example, refusal to permit transgressors to take part in such events as are approved by the association?"

"3. If such a resolution is passed, may we rely upon you to abide by its provisions?"

The next meeting of the executive committee will be held on the first day of November.

ECONOMY TEST NEXT WEEK.

Ten entries have been received for the economy test organized by the New York Motor Club, as follows: Four Franklin cars of different types, two Reo cars, one Frayer-Miller, two Compound cars, and one Marmon, making in all six air-cooled cars and four water-cooled. It is announced that a number of other manufacturers have also signified their intention of competing. Revised rules for the contest have been issued since the postponement of the event from the week of October 23 to that of October 30. These show a number of changes, including drastic provisions against speeding, the allotment of oil and fuel charges on the basis of the schedule adopted by the New York Automobile Trade Association, and other points. The program includes a two-day run from New York to Philadelphia and return, another two-day run to Albany and back, returning probably by a different route, and a third two-day run from New York to Southampton, Long Island, and return. Nightly sessions are being held this week by the contest committee to arrange the details of running rules, to appoint officials and to settle other points in connection with the competition.

A STOCK CAR RACE MEET.

The New Jersey Automobile and Motor Club, of Newark, N. J., will hold its third annual race meet at Waverly Park on Tuesday, November 7, the first event to start at 1:30 P. M. The events, which are for stock cars only, include a five-mile handicap, free for all, for motorcycles; three-mile race for stripped single-cylinder cars; five-mile free for all for regularly equipped cars; five-mile race for touring cars costing \$4,000 or less, with regular equipment, carrying four passengers weighing at least 125 pounds each; five-mile race for fully equipped cars costing \$1,500 or less; the New Jersey Automobile and Mo-

tor Club handicap at five miles, for regularly equipped cars, and a gymkhana race.

The first and second machines in each event, excepting the motorcycle race, will be eligible for the N. J. A. and M. C. handicap, the prize in which is a cup to be raced for annually for five years, the driver with the greatest number of wins to his credit to be given the cup at the end of that time. Each winner will receive a gold medal and his name will be engraved on the cup.

Entry blanks and information may be obtained from Secretary C. S. Wells, 717 Prudential Building, Newark, N. J.; entries close Saturday, November 4.

BEACH RACES IN NOVEMBER.

Special Correspondence.

ATLANTIC CITY, Oct. 23.—Chairman Walter Edge, of the Atlantic City Automobile Club's racing board, announces that the final series of beach races over the Ventnor course, for the present season, has been fixed for Monday and Tuesday, November 13 and 14. Tracy, Campbell, Cedrino and several other competitors in the Vanderbilt cup race, have entered, and the hope of the promoters that world's short-distance records will be brought here before winter, seems in a fair way of being realized, as the beach is never in better condition than during the Indian summer days of November.

RACES AT POINT BREEZE.

Special Correspondence.

PHILADELPHIA, Oct. 23.—On Thursday next the local association of automobile dealers will have a race meet at the Point Breeze track, the only event of the kind held here this year. Nine events are on the program, including a match race for \$500 a side between Harry Edwards' Reo and C. W. Sprague's Buick. The race will be at five miles, an agreement being made that in the event of tire troubles to either car the race is to be run over. The other events are all for stock cars, no entries of racing machines having been solicited.

INDIANAPOLIS MEET POSTPONED.

Special Correspondence.

INDIANAPOLIS, Oct. 23.—Rain and bad weather placed the track at the Indiana State Fair Grounds in such condition last Friday that the Indianapolis Automobile Racing Association was compelled to change the date of its fall race meet from Saturday, October 21, to Wednesday, October 25. The program arranged is the strongest ever offered in Indianapolis, the postponement, though a great disappointment, resulting in a number of strong additional entries being made.

DELAWARE RIVER LAUNCH RACES.

Special Correspondence.

PHILADELPHIA, Oct. 23.—The feature of last Saturday's races of the Riverton Yacht Club, on the Delaware River, was the performance in the Class B contest of the *Hupa* which, starting from scratch in a field of seven, covered the eleven-mile course in 30:24. Such fast craft as the *Simplex III*, of New York, and the *Walk-away*, of this city, were given upwards of seven minutes' start of the *Hupa*, and had the course been a half-mile longer, they would have been beaten. As it was, they managed to beat her by 10 minutes and 48 minutes, respectively.

America is not the only land of cheap watches. An English magistrate recently fined an automobilist for fast driving on the evidence of a watch that cost about \$1.25.

WASHINGTON CLUB RUN.

Ten Cars of New Club Participate in Trip to Frederick.

Special Correspondence.

WASHINGTON, D. C., Oct. 23.—Aside from the small number of participants, the first run of the Automobile Club of Washington to the county fair at Frederick, Md., on October 19, was a big success, and it will undoubtedly be followed at frequent intervals with runs to other interesting points within a radius of 100 miles of Washington.

Every car of the ten that started made the round trip and there was an entire absence of stops on account of tire or mechanical troubles. A Cadillac touring car containing a party from Baltimore joined the Washingtonians a few miles this side of Frederick, and the driver was unfortunate enough to run his car into a soft spot, causing the machine to skid and throw out the occupants. One of the passengers had his arm broken.

A 45-horsepower Pope-Toledo, with Royce Hough at the wheel, and having as passengers a number of newspaper men, was the pilot car. The start was made at 8 o'clock. A slight rain during the early morning served to lay the dust and made the roads nearly perfect. In quick succession the towns of Olney, Latonsville, Ridgeville and Newmarket were passed, and the pilot car entered the outskirts of Frederick, fifty-three miles from Washington. Beyond Ridgeville the country is somewhat hilly. Nothing finer in the way of scenery can be imagined than along this road, and the country in this section is rich in historical interest.

Frederick is the county seat of Frederick county. It is situated on Carroll's Creek, a tributary of the Monocacy, and is one of the oldest towns in Maryland. After seeing the fair, the automobilists visited a number of historical places in the picturesque old town, and then made the homeward trip.

The cars participating in the run included two Pope-Toledos, two Pope-Tribunes, three Cadillacs, a Peerless, a Haynes-Apperson and a Stanley steamer.

INDIANA CLUB DINES.

Members Attend Banquet in Indianapolis and Discuss Clubhouse Project.

Special Correspondence.

INDIANAPOLIS, Oct. 23.—The first of a series of banquets to be given by it during the coming winter, was given by the A. C. of Indiana at the Denison Hotel, Indianapolis, Friday night, October 20. Covers were laid for about sixty guests, including persons from many points of Indiana, with the greater number from Indianapolis. The menu cards were in the form of a castiron wheel with tiny rubber tires, with the menu neatly printed between the spokes.

Many matters of interest were discussed informally, the most important being the project for a new clubhouse. The club has been without a permanent home, although it numbers in its membership several hundred of the most enthusiastic motorists in the State. A committee consisting of F. M. Hobbitt, Gus Kevers, L. M. Wainwright, Frank Staley and Carl G. Fisher, was appointed to decide the feasibility of erecting a clubhouse either in Indianapolis or in the country within a few miles of the city.

An interesting discussion on tires was led by H. O. Smith. A run is planned by the club to be held at some date in the near future.

ORPHANS' DAY IN BALTIMORE.

More than 300 Children Enjoy Ride Through Druid's Hill Park.

Special Correspondence.

BALTIMORE, Oct. 23.—The first annual orphans' outing and automobile parade under the auspices of the Automobile Club of Maryland, was held last Saturday afternoon, seventy-five cars, belonging to members of the club and others, participating. More than 300 children from five or six orphanages of the city were accommodated and the affair was eminently successful, in spite of the cool weather, which nipped the noses and reddened the cheeks of the little ones.

Prior to the trip through Druid Hill Park and out a country road for eight or nine miles, a prearranged route was followed through the heart of the city. The cars also passed the zoo in the park, so that the children might see some of the animals. Many of the autos in the parade were gaily decorated with flags and vari-colored paper, and 500 dahlia blooms, donated by a local seed merchant, were distributed among the children. An attendant accompanied each automobile. The committee in charge of the outing was composed of Messrs. H. M. Rowe, F. W. Darling and George S. Dickey.

It is contemplated to repeat the outing annually, and the success of this one leads the club to believe that the response of automobile owners to the call for cars will be even wider in the future.

CHICAGO CLUB TICKET.

Special Correspondence.

CHICAGO, Oct. 21.—The nominating committee of the Chicago Automobile Club submitted its slate last Thursday to the board of directors, who approved the ticket. It will be voted on at the annual meeting of the club on November 9.

John Farson, of Oak Park, who has already served two years as president of the organization, having preceded Ira M. Cobe, was nominated for president. He has stated that he would accept the office again if elected. Sydney S. Gorham, as secretary, is the only one on the list who held office this year. It was the wish of the committee to have Ira M. Cobe on the ticket again as executive officer, but he declined on the ground of lack of time. The ticket in its complete form follows:

President, John Farson; first vice-presi-

dent, Allen S. Ray; second vice-president, B. H. Marshall; secretary, Sydney S. Gorham; treasurer, T. J. Hyman; directors, Ira M. Cobe, R. Tarrant, Jr., F. C. Donald, N. H. Van Sicklen, Jerome A. Ellis and Charles E. Gregory.

There is considerable talk of putting a members' ticket before the club at its election, and Jerome Ellis is being mentioned as the probable candidate for president.

AERO CLUB OF AMERICA.

About seventy members of the Automobile Club of America, who are enthusiasts on the subject of aerial travel, have formed what will be known as the Aero Club of America, the purpose of which will be to advance the development of the science of aeronautics and to encourage all kinds of aerial navigation, in furtherment of which the club will arrange for an air-ship race next spring. The following officers were elected: Captain Homer W. Hedge, president; John F. O'Rourke, first vice-president; C. J. Glidden, second vice-president; Augustus Post, treasurer, and S. M. Butler, secretary.

AUTO PARADE IN ALBANY.

Special Correspondence.

ALBANY, Oct. 23.—The Albany Automobile Club has arranged to hold its annual parade on the afternoon of October 31, in conjunction with the All Halloween festival which is becoming a very elaborate celebration in this city. The All Halloween Carnival Association has given \$175 for prizes and authorized the automobile club to advertise the award of prizes to the best decorated car as follows: First prize, \$75; second, \$50; third \$25; fourth \$15.

Invitations have been sent out to automobilists in and around Albany to participate in the parade. The parade committee consists of Joseph B. Taylor, F. H. Fisk, Jr., Edward Leahy, Roy Robinson, Archibald J. McClure.

WOMEN DRIVERS IN KANKAKEE.

Special Correspondence.

KANKAKEE, ILL., Oct. 23.—Several of the wives of members of the recently organized Kankakee A. C. have become enthusiastic auto drivers. Among these women drivers are Mrs. W. R. Hickox, Mrs. J. Peschel, Mrs. E. A. Lecour, Mrs. L. P. Lecour, Mrs. Thomas A. Kerr and Mrs. W. L. Rankin. The club has twenty-eight members,

mainly professional and business men. E. C. Holmes is president and C. H. Cobb is secretary. The members are using Cadillac, Peerless, Thomas, Olds, Rambler and White cars. There is a movement now to substitute most of them with higher power, four cylinders being the aim.

The roads are in good condition and there are some beautiful routes, one along the Kankakee river to Mokence, and another leads along the same stream to Wilmington. Chicago is seventy-five miles from Kankakee by auto, and the members drive the distance in three or four hours.

Indications are that the club will grow considerably next year.

NEWS NOTES OF THE CLUBS.

NEW YORK.—Preceding his departure by boat from New York on Tuesday to resume his "Around the World Tour," Charles J. Glidden, of Boston, addressed the members of the Automobile Club of America Monday night on his familiar topic: "Touring the World in a Motor Car." His speech dealt this time with the southern hemisphere, embracing the Fiji Islands, New Zealand, Tasmania, Australia and Java, and was illustrated by more than 200 lantern slides from photographs taken by Mr. Glidden during his last trip.

CHICAGO.—The Chicago A. C. recently received a communication from the Minneapolis A. C. in reference to chartering a special train to go to the Ormond Daytona races in January. The plan as proposed is to invite such clubs as the Indianapolis, Louisville and Grand Rapids organizations to join forces with the Twin City and Chicago clubs to make the trip in a body. The train would consist of the regulation sleepers, diner, drawing room, observation and baggage cars, and would remain at Ormond until the party was ready to return. The Chicago club has sent out circulars to all its members to find out how many would be desirous of going.

WORCESTER, MASS.—One hundred and thirty members of the Worcester A. C. attended an entertainment at a newly opened theatre in this city on Wednesday evening October 11 as the guests of C. W. Fonda, resident manager. The entertainment was thoroughly enjoyed, and everyone would have been happy but for the absence of M. Percival Whittall, chairman of the runs and tours committee. Mr. Whittall lives in Leicester. Just before the close of the entertainment the following telegram from Mr. Whittall in Leicester was read to those present: "Sorry I cannot be with you to-night. Quinn has got me at last for over-speeding and refuses to take bail." Quinn is the notorious constable who held up the Glidden tourists on their return trip from the White Mountains.

BALTIMORE.—The annual meeting of the A. C. of Maryland for the purpose of electing officers was held recently at the Hotel Altamont, with the following result: W. S. Belding, president; Richard J. Leupold, vice-president; George S. Dickey, secretary, and Ernest J. Knabe, Jr., treasurer. All of the officers of last year were re-elected except Secretary C. Warner Stork. The following committees were appointed: Laws, Messrs. Yellott, Keyser and Reese; printing, Messrs. Peard, Carr and Reese; auditing, Messrs. Primrose, Detrick, Williams and Hollingsworth; membership, Messrs. Knabe, Stork and Detrick; contests, Messrs. Darling, Miller and Rowe; house, Messrs. Thomas, Rowe, Primrose and Leupold. An effort will be made to have a bill introduced at the next meeting of the legislature to compel all vehicles to carry lights. In spite of inclement weather a fair number of members attended the election.



PARADE OF AUTOS IN CEDAR RAPIDS UPON OCCASION OF RECENT RACE MEET.

October 3 was automobile day at the Cedar Rapids (Iowa) Carnival, and members of automobile clubs from outlying towns joined the members of the Cedar Rapids Automobile Club in their efforts to make the affair a success. A parade was held in the afternoon, through Cedar Rapids' beautiful thoroughfares, and a large number of cars were in line. One of the most popular automobilists in line was little Miss Hazel Henderson, who although but ten years of age, drove her large Rambler car with the confidence and skill of a professional chauffeur. The Cedar Rapids club members under whose auspices the meet was held, were enthusiastic over the success of the affair.

CHICAGO AGENCY CHANGES.

Annual Transfers Attract Attention—White and Ford to Build Branch Houses.

Special Correspondence.

CHICAGO, Oct. 23.—Chicago's "automobile row" has witnessed many changes of agencies during the past few weeks; in fact, there have been so many that it has aroused the interest of the trade everywhere. The tendency in Chicago seems to be a general switching around at the end of each season.

Fred P. Brand has taken charge of Apperson Brothers' Chicago branch, Jack Fry, who up to Monday had charge of it, having gone to Colorado to recuperate his health.

Ralph Temple has relinquished the Franklin agency, and is now handling the Premier and the Reo, and is importing Panhards direct from France. The Premier was handled heretofore by the Bennett-Bird Company, which has no agency at present, but is negotiating with several firms and expects to take up one soon. The Reo was formerly handled by a joint company composed of Miss Andrews, C. A. Coey and a banker by the name of Foster. The Franklin agency has been given to Halsey Brothers, of St. Louis, who will open a Chicago house.

The White Sewing Machine Company will open a Chicago branch under the management of Webb Jay, erecting a building of its own in the near future. The company has temporary headquarters with the Pardee-Ullman Company, which handled the steamer last year. The latter company now has only the Packard and the Baker electric.

E. G. Sykes has resigned his position as superintendent of the Chicago branch of the Locomobile Company of America, and A. J. Banta took his place the first part of last week.

The agency for the Royal Tourist, formerly held by the Barnstetter Automobile Company, has been given to the McDuffie Automobile Company, which is erecting a new building south of its present headquarters, to be ready for occupancy about February 1.

The Ford Motor Company of Detroit has entered the Chicago field, and occupies the old quarters of the Columbia Vehicle Company as temporary headquarters. It is the intention of the Ford people to build in the near future. C. C. Meade, lately of New York, is temporarily in charge.

EXPOSITION CAR ITINERARY.

Because of misstatements which have appeared in the press relative to the itinerary of the exposition car which the Winton Motor Carriage Company is using as a traveling salesroom, in which to exhibit new models, the company has issued the following authoritative itinerary:

Kansas City, October 28 and 29; Denver, October 31 to November 3; Salt Lake City, November 5; Sacramento, November 7; Stockton, November 8; San Francisco, November 9 to 12; San Jose, November 13; Fresno, November 14; Los Angeles, November 15 to 18.

BIG GARAGE FOR THOMAS CARS.

Work will soon be commenced on a large new garage which is to be erected on the southeast corner of Broadway and Sixty-third street, New York, for the sale and storage of Thomas cars. E. R. Thomas, of Buffalo, has purchased the land, and the building will be erected by the building firm of Haupt & Phinney. Harry Haupt, New York agent for the Thomas machines,

has arranged to handle the Thomas cars for the next five years, and has planned the garage on a liberal scale. With its four stories and basement, a frontage of 114 feet on Broadway and 145 feet on Sixty-third street, the building will have accommodation for about 500 cars, and still have three stores to lease on Broadway; the corner store will be used by Mr. Haupt as a salesroom for cars. As it is proposed to occupy the building about April 1, work will be commenced very soon.

FINE GARAGES FOR BALTIMORE.

Special Correspondence.

BALTIMORE, Oct. 23.—The Mar-Del Mobile Company, of Baltimore, has broken ground for the erection of a fine garage and salesroom on a lot fronting 150 feet on Charles street and 150 feet on Mt. Royal avenue. The contract calls for a three-story building with basement, of reinforced concrete construction, with front of stone and brick. The first-story fronts, on both streets, will be mostly of plate glass, so that automobiles can be advantageously displayed. The second floor will be occupied by the Automobile Club of Maryland, and will include reception, reading and smoking rooms and a ladies' parlor.

The lot west of the Mar-Del property has been acquired by M. Gillet Gill, for the Motor Car Company, where an automobile establishment will also be conducted. Both properties are extremely desirable, for Mt. Royal avenue is the best paved thoroughfare of the city, and, besides leading to Druid Hill Park, crosses all of the principal streets of the city. The two buildings will take up an entire block on the avenue front. It is reported that the Gill company, whose plans are not yet generally known, will expend over \$100,000 in the erection of its establishment.

NEW OLDS BOSTON AGENT.

The Adams-Sutton Motor Company has been incorporated with a capital stock of \$40,000 to handle the product of the Olds Motor Works in Boston. The president and manager is Walter O. Adams, formerly general manager of the Crest Manufacturing Co., of Cambridge, and later assistant sales manager of the Ford Motor Co., of Detroit. In entering upon the new connection, he resigns the position of foreign agency director with the Olds Motor Works of Lansing. Davis Sutton, the secretary-treasurer, returns to Boston from the office of the Canadian Bridge Company at Walkerville, Ontario. The company will occupy large quarters in the new Motor Mart in Park Square, and will be ready to show the new Oldsmobile cars during the latter part of November. The Oldsmobile commercial cars will be given especial attention, Mr. Adams having this department under his personal direction.

NEW YORK CADILLAC GARAGE.

Contract has just been let by Walter C. Martin, president of the Cadillac Company of New York, metropolitan agent for Cadillac cars, for the erection of a fine fireproof garage building situated on the corner of 62d street and Broadway. It will have a frontage of 52 feet on Broadway and 72 feet on 62d street. It will cover 20,000 square feet of ground, and will consist of four stories and a basement, all devoted entirely to the Cadillac business. It will be equipped with the latest steel elevators, lighted on three sides through large plate windows, and fitted throughout with every modern convenience. It is to be ready for occupancy by February 1. The cost is estimated at \$300,000.

TRI-CITY ACTIVITY.

New Models Under Way in Moline—Attractive Drives About Davenport.

Special Correspondence.

MOLINE, ILL., Oct. 23.—There promises to be a season of great automobile activity in the cities of Moline, Rock Island and Davenport next year.

At Moline the Moline Automobile Company has sold every machine that it built this year, and is now preparing to go to work on three new models for next season. It is occupying a building 60 by 300 feet, and is now building another 40 by 165 feet.

The feature of car building for next year's business will be the greatly advanced prices. A jump from \$1,750 to \$2,500 will be made on one of the machines. It is planned to invade eastern territory with the new models.

The 1906 Moline, model A, will have a four-cylinder vertical, water-cooled engine. 4 1-2 inch bore by 5 inch stroke, developing 30-35 horsepower. The body will seat five passengers, and has double side entrance, with divided front seats. It is planned to build fifty of these machines.

Model C will have a four-cylinder motor, water-cooled engine of 3 3-4 inch bore by 4 1-2 inch stroke, developing 18-20 horsepower. The body will be a side entrance tonneau with a divided front seat. The company expects to build 200 of these cars. It will also manufacture a lower priced machine that is to be known as 1906 Model G. It will be equipped with a double-cylinder, water-cooled, horizontal opposed motor under the body, 4 3-4 inch bore and 5-inch stroke. Model G will have a detachable tonneau body with divided front seat.

All the cylinders for the motors of these machines are ground after being bored and reamed. The works are located at East Moline, and promise to become the most extensive in this section of the Mississippi River valley. A quarter-mile testing track will be provided.

In the three cities of Moline, Rock Island and Davenport, there are now more than 100 automobiles, among them some of the finest machines produced. Davenport has an auto club, and plans have been drawn for a capacious garage.

There are hereabouts some of the most attractive auto drives in the west. One leads over a stone road from Davenport to Clinton, forty miles long. There is another to Muscatine, twenty-five miles.

Automobile owners are getting along famously with their country cousins. It is predicted that it will not be long until some of the more prosperous Hawkeye soil tillers will be driving their produce to market in devil wagons modeled after farm wagons.

TO MARKET DELIVERY WAGONS.

Special Correspondence.

GRAND RAPIDS, MICH., Oct. 23.—The Soules Motor Car Company, recently organized in this city for the purpose of manufacturing light delivery vehicles, has let a contract for the manufacture of twenty-five wagons to the Michigan Automobile Company, of Kalamazoo. If these find ready sale, an order for 300 cars for next year's delivery will be let. The company will eventually manufacture the wagons itself, but have not yet secured a location for a factory. The cars are extremely light, weighing but 1,250 pounds, and are built to run at a speed of fifteen miles an hour. They embody all the characteristics of a light delivery wagon. The officers of the company are H. G. Dykhouse, president; David Wolf, secretary and treasurer, and J. E. Soules, manager.

News and Trade Miscellany.

At the convention of street car employees recently held in Chicago, \$20,000 was appropriated to purchase automobiles which are to be put into service during any strike of the union, to carry passengers from place to place. The money received in fares will be put into the defense fund, from which the money appropriated was drawn.

The New York firm of Smith & Mabley formally opened its magnificent new automobile salon at Broadway and Fifty-sixth street, on Tuesday, October 17, when a large number of persons took advantage of the occasion to view the new quarters of the company.

Two auto 'buses are now in operation in Lansing, Mich., between the depot and the hotels. J. A. Carr & Co. have placed in operation an Olds auto 'bus with a seating capacity of twelve persons. W. H. Porter is the proprietor of the other 'bus, which is a Reo, and also has a seating capacity of twelve. The cost to the patrons will not be increased, and the saving in time will no doubt be appreciated by the traveling public.

North and South Dakota are being invaded by the automobile, according to Maurice Wolfe, Dakota manager of the Pence Automobile Company, of Minneapolis. Most of the large land companies are using the machines to take their clients about the country. In the past it was necessary to make long trips on horseback or in buggies to see the country, and much time was wasted. Many of the large land firms have bought several cars for this work. Mr. Wolfe states that two cars are being used in the Bad Lands, and ground is covered in one day which formerly took three or four days. He also declares that with the more prosperous farmers of the country the automobile as a means of travel is fast taking the place of the horse.

The Worcester (Mass.) Automobile Dealers' Association is considering the advisability of holding a three days' show in Worcester in December or January. This is the first season the local dealers have been organized, and so great have the sales been this season in vicinity that an exhibition of some sort is deemed necessary, although Boston and its big show is near at hand. The dealers and the local club will no doubt work hand and hand in the matter. There are seven dealers at present in the association.

The 40-horsepower Decauville racer with which Guy Vaughan has won so many races during the last three years, and which was the car used in the making of the 1,000-mile and the 24-hour records by the young driver at Empire City track this year, has been sold by the Decauville Automobile Company, to Dr. A. F. Morris, of New York, who will use the racer in beach and track races in the future.

G. H. Curtiss, manufacturer of Curtiss motorcycles, is negotiating for the removal of his factory from Hammondspoint, N. Y., to Rochester. Mr. Curtiss intends to manufacture his own motors in the future. Until now they have been made by the Kirkham Motor Works, in Bath. The force of employees will be doubled and the plant considerably enlarged. Mr. Curtiss holds several motorcycle records.

Ralph Temple, of Chicago, has secured the agency for the Reo cars in that city.

In addition to the Y. M. C. A. automobile school in Worcester, Mass., which this year enters upon its second term, another, to be known as the Harrington automobile school, has been opened on Central street by the

Harrington automobile station. Instruction work will be carried on under the direction of John S. Harrington. Mr. Harrington, whose station is one of the largest in the city, says that he cannot supply purchasers of his cars fast enough with competent drivers, and for this reason deemed it advisable to open the school.

George Vernor Rogers, secretary of the Mitchell Motor Car Company, of Racine, Wis., recently spent some time in Havana in the interests of his concern. The Havana agency for this company has been turned over to the West Indies Transportation Company, of which Mr. Barnhardt is the general superintendent.

Ground has been broken for the new home of the Rambler in Minneapolis. L. H. Fawkes has the agency, and will erect a neat brick veneered building on Sixth street, between First and Second avenues. Mr. Fawkes is one of the automobile dealers who graduated from the bicycle trade, being one of the first to recognize the business opportunities that the automobile offered.

The E. R. Thomas Motor Co., of Buffalo, will build a racing car of 120 horsepower for the racing season of 1906; the new machine will be driven by M. Roberts, who handled the Thomas six-cylinder car in the Vanderbilt cup elimination trials. The car that took part in the elimination trials will also race next season in events for which it is eligible.

The White Sewing Machine Company, of Cleveland, O., has leased the building in Philadelphia formerly occupied by the Bankers, and with E. C. Johnson, formerly of the Quaker City Automobile Company, as manager, is preparing to wage a vigorous campaign in 1906.

A machine that will shortly be seen for the first time in America is the Dutch Spyker car. Sidney S. Dixon, of London, is now at the St. Regis in New York, for the purpose of arranging for an American agency. A feature of the Spyker that has attracted attention is that it raises practically no dust when on the road. There is a smooth metal pan under the engine, and every part of the underbody is arranged to facilitate the passage of air currents and prevent the formation of eddies; the exhaust is so directed that it does not tend to raise dust.

Automobile dealers in Pittsburg are complaining bitterly of the inroads which the department stores are making in the supply business. A few years ago these stores did not carry any automobile fittings, and the regular dealers had it all their own way. Now several of the stores carry tires, lamps and clothing. They have been advertising them this season in a way that has taken thousands of dollars from the regular dealers. It is claimed that the supplies carried by most of these stores are inferior in quality, and that in the end the automobile owners come back to the garages for their repairs, but in the meantime the dealers are losing much trade.

Philadelphia's numerous "Seeing Philadelphia" cars are in use every night by the campaigners working in the interests of the new City Party. Mass meetings are held in several locations each night, the orators, with music and fireworks, moving from point to point previously advertised.

The Hayes Manufacturing Company of Detroit expects to move into its new plant early in November. Two brick buildings are being erected. The main building is 200 by 100 feet, and besides the offices and sample rooms contains the cutting and

stamping department, assembly room, and a large foundry. This building will be devoted entirely to the manufacture of hoods, metal dashes, mud guards, tanks, sheet metal specialties and forged irons. Another building, 150 by 100 feet, is devoted entirely to enameling the various parts, and contains three large ovens. Hoods, guards and running gears will be enameled in colors to match those of any make of car. It has been found that parts coming in contact with the heat of the radiator, or parts like the running gears, which receive the worst abuse from mud and water, retain their lustre much longer when enameled than when they are painted. E. A. Carpenter, until recently superintendent of the finishing department of the Packard Motor Car Company, has charge of this department.

On October 15, Hayden Eames, of Cleveland, Ohio, terminated his management of the sales of the A. O. Smith Company, of Milwaukee. All orders and correspondence concerning the Smith factory products, therefore, should be sent to the makers.

The E. C. Walker Company, now located at New Albany, Ind., has sold a half interest in its business to E. C. Jacobson, of Louisville, Ky., and has erected a large factory building at 1913-1923 Logan street, that city, where the company will continue the present business of manufacturing the component parts of an up-to-date steam car. In addition to this, it will manufacture a pneumatic shock absorber which is applicable to the springs of any type of car, and a dust deflector which will be particularly desirable for gasoline automobiles.

Freeman Hinckley, for some time past assistant manager of the Pope Manufacturing Company's Boston branch, has just been appointed manager there, and Harry E. Marvel, who has been with the company for the past ten years as salesman, will succeed Mr. Hinckley as the new assistant manager.

The Fisher Automobile Company, of Indianapolis, has announced that it will handle several lines of unlicensed cars in 1906. It has had the agencies for the Pope-Toledo, Oldsmobile and Winton, and has now arranged to handle the Premier, Maxwell, Stoddard-Dayton, and the National in 1906. The National Motor Vehicle Company is now making several four and six-cylinder cars which will be placed in the Fisher stock as soon as completed. The Fisher company is one of the oldest and largest concerns in the city.

Following experiments made with a number of automobiles, the county commissioners of Marion county, Ind., will ask for an appropriation of \$3,000 at the meeting of the Marion county council in January, for the purchase of a motor car. The hire of liveries by the commissioners is said to reach almost \$2,000 yearly, and experiments with autos have demonstrated that the same work can be done in about half the time with them.

A three-story brick and stone building 50 by 200 feet in size, has been leased in Springfield, Ohio, by the King Manufacturing and Garage Company, to be used as a manufactory of automobile tops, a garage and a supply depot. The company was recently incorporated with \$20,000 capital, and took over the interest of the King Manufacturing Company. It is now entering the field as jobbers of auto accessories, and is opening a garage. It has excellent prospects, as Springfield is a city of 40,000 inhabitants and 100 cars are owned there, while there has been no garage up to the present time. The building leased by the new company is equipped with its own electric plant, and has an elevator large enough

to raise autos to the upper floors. Tourists through southern Ohio will now be able to secure any reasonable accommodations and repairs.

The name of the Gray Manufacturing Company, makers of mufflers, auto chimes and marine whistles, in Detroit, has been changed to the Gray-Hawley Manufacturing Company, George E. Hawley, formerly secretary of the Automobile Equipment Company, having purchased an active interest in the business. Larger quarters have been secured at 605 to 609 Fort street, W., Detroit.

W. J. Foss and Archie Hughes, who have for a number of years been connected with the Pope company, have closed contracts for the Pierce and Cadillac agencies in Philadelphia and extensive surrounding territory. It is understood that they will also handle a third line of cars. Both members of the firm are well known in Philadelphia, where they have been in business before.

The Buick Motor Car Company, which will handle the Buick exclusively in Kansas City, has moved into its recently completed garage at Fifteenth street and Virginia avenue, that city.

The American Coil Company, formerly located at West Somerville, Mass., has removed to Foxboro, Mass., where it will have increased facilities for taking care of orders for all goods pertaining to the ignition of gas and gasoline engines. This company has taken over the business of the Sherman Manufacturing Company, of Boston, Mass., manufacturers of electrical specialties.

The Upton Machine Company, of 17 State street, New York, with works at Beverly, Mass., will in future be known as the Beverly Manufacturing Co.

The Woods Motor Vehicle Company, of Chicago, has closed a ten-year lease on a new building on the west side of Cottage Grove avenue, south of Twenty-fifth street. The building has a frontage on Cottage Grove avenue of 113 feet and extends through to Calumet avenue.

Mills & Kennedy, 733 Boylston street, Boston, Mass., have secured the New England agency for the Welch car.

A. E. Morrison, who has been acting as manager of the Boston branch of the Peerless Motor Car Company, has organized a concern to be known as the Morrison-Tyler Motor Car Company, which will sell the Rainier gasoline cars throughout New England.

Inadvertently the name of the car fitted up for camping in the North Woods by Messrs. Fay and Young, as illustrated and described at length in the October 12 issue of THE AUTOMOBILE, was omitted from the article. Doubtless, however, every reader versed in automobile matters quickly recognized that it was a Thomas Flyer by the characteristic form of the upper part of the hood, which is one of the distinctive differences between the Thomas and most other American and foreign cars. The photograph was taken by Chickering, the well-known Boston photographer.

The Olds Motor works, of Lansing, Mich., has added a factory accounting department, with the object of ascertaining the relative cost of every article and the efficiency of the employees.

The Duryea Power Company, of Reading, Pa., is negotiating with the Pleasantville (N. J.) Board of Trade for a site upon which to build an automobile repair establishment and factory for marine engines. The site is near the junction of the new boulevard across the meadows to Atlantic City.

The latest addition to Philadelphia's automobile colony is the headquarters of the Wayne Automobile Company, of Detroit, Mich., on the west side of Sixteenth street, above Chestnut.

The Rhode Island Motor Car Company, of 69-71 Broad street, Providence, Rhode Island, will handle the Thomas "Flyer" in that city for 1906, C. S. Henshaw having relinquished the agency.

The Reo management has effected arrangements with the Western Union and Postal Telegraph companies for a special telegraphic service direct from its factory at Lansing. The Western Union has already installed a full set of instruments.

B. G. Gilbough, of Chicago, manufacturer of ignition specialties, has removed from 175 Dearborn street, to Room 312, 36 LaSalle street.

The Atlas Automobile Company, which does the largest business in second-hand automobiles of any concern in Pennsylvania at its garage at 6235 Penn avenue, Pittsburgh, is getting ready to build a two-story building that will have more than an acre of floor space.

The New York agency for the Mitchell car has been taken by the Motor Vehicle Repair and Storage Co., of 123 West 31st street. The company is ready to make immediate delivery of two-cylinder and four-cylinder models.

The Hyatt Roller Bearing Company, of Harrison, N. J., has completed a large addition to its plant, which is now being equipped with machinery to double the company's present productive capacity. Peter S. Steenstrup has been re-elected secretary and sales manager for the new year.

Halsey Brothers, of St. Louis, are to take charge of the interests of the H. H. Franklin Mfg. Co., in Chicago, until recently under the agency of Ralph Temple.

The St. Louis Auto-Car Company has leased the building at 1843 Broadway, New York City, which it will use as a garage.

At the annual meeting of the stockholders of the Logan Construction Co., of Chillicothe, O., the stockholders voted to increase the capital stock to \$150,000 and to erect an addition to the factory and equip it with new machinery, so that nearly every part of the cars can be built in the works.

The Eureka gasoline separator is now manufactured by the Winkley Company, Box 243, Detroit, Mich., and not of Hartford, Conn. The Hartford address was erroneously given in referring to the separator in THE AUTOMOBILE of October 12.

The Willmarth & Marmon Co., of Grand Rapids, Mich., manufacturer of the drill grinders, will shortly remove to its new three-story factory at the corner of Canal and Leonard streets, that city, where the company will have twice its present factory capacity. In its new location it will be prepared to manufacture metal specialties under contract.

The Marion Motor Car Company, of Indianapolis, has its 1906 model on the road, and expects to have it ready for delivery on October 25. A specialty will be made of the touring model, it is announced, which will have the engine placed lengthwise and a sliding-gear transmission.

C. H. Taylor, W. E. Stone and U. G. Smith, of Cleveland, Ohio, have formed the Forest City Motor Car Company, to manufacture a light gasoline runabout on the order of a piano-box carriage. It is fitted with a small two-cycle engine, and the transmission is by means of ropes to the rear wheels. The promoters have a deal on with citizens of Massillon, Ohio, to

locate a plant in that city to manufacture the machines. It is proposed to capitalize the company at \$60,000, and the promoters want the citizens of Massillon to subscribe to half the stock. The deal is still pending.

Ernest S. Partridge, vice-president and general manager of the Decauville Automobile Company, sailed for Paris, Thursday, on the *Amerika*, to oversee personally the preparation of Decauville cars for the forthcoming shows. While in Paris he will also attend to the establishment of the Paris branch of the American company, which has been rendered necessary by the large number of cars owned by Americans who are touring through or living in Europe. Mr. Partridge will be accompanied by M. J. Rothschild, American representative of the firm of Audinot et Cie., auto body builders.

An auto repair shop has been opened in Newport, R. I., at 86-88 John street, by B. Morgan, who intends to carry on the manufacture of his patented single-piece inlet valves, as well as a general repair business.

The Tritt Electrical Manufacturing Company has removed from South Bend, Ind., to Union City, Ind., and is now established in the factory formerly occupied by the Union Automobile Company.

The W. L. Casaday Manufacturing Company, of South Bend, Ind., has about concluded to drop automobile manufacturing and devote its efforts to the development of stationary gasoline engines. Mr. Cleveland, until recently manager of the company, has gone to California with the intention of taking up his residence there.

The Buick Motor Company, of Chicago, has added a fully equipped machine shop to its establishment on Michigan avenue, to take care of repairs for Buick patrons. W. J. Mead, formerly well known to the bicycle trade, has been appointed manager of the concern, to take the place of H. E. Shiland, who has gone to the factory at Jackson to assume the duties of general sales manager.

The Adrian Steel Casting Company, of Adrian, Mich., which was incorporated last July, with a capital stock of \$30,000, is making a specialty of the manufacture of light crucible steel castings, and has a productive capacity of three to four tons of castings per day. G. B. M. Seager is president of the company.

The Big Thunder Manufacturing Company, of Belvidere, Ill., has added to its plant a special department for the overhauling and repairing of automobiles.

The Tritt Electric Company, heretofore located at South Bend, Ind., has removed to Union City, Ind., where it is established in the building formerly occupied by the Union Automobile Company.

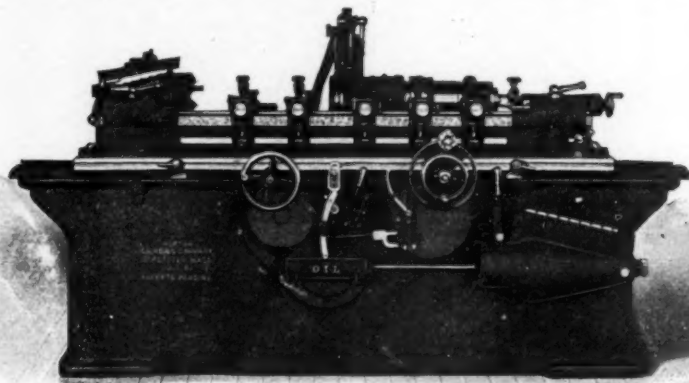
An arrangement has been effected between the G. & C. Dry Battery Manufacturing Company and the Royal Battery Company, of New York City, whereby the latter company will control the sole manufacturing rights to the "Greece" storage battery. The selling rights to the battery are controlled by the National Sales Corporation of New York.

Shipments of Franklin 1906 models were begun some weeks ago, and dealers who have received the first samples are repeating their orders. Those who have had an opportunity to judge from personal experience, state that the new model G, the shaft-driven, light car, is a great hill climber.

J. A. Dowling, formerly connected with Dowling & Maguire Company, of Boston, Mass., has secured the Pierce agency for the states of Maine, New Hampshire and Vermont.

INFORMATION FOR BUYERS.

GRINDING MACHINERY.—Grinding, as applied to the various parts of automobiles, is of such importance that many firms devote special attention to this branch of trade. Among these is the Norton Grinding Co., of Worcester, Mass., builders of machinery for cylindrical grinding and manufacturers of crankshafts. One of the machines built by the Norton Co. is illustrated herewith.



NORTON GEARLESS GRINDING MACHINE.

It is used for grinding shafts, pistons, pins and other pieces that require an accurate exterior finish. The manufacturers state that after long experience in grinding crankshafts, a machine has been produced that is without gears, is simple to operate and effective in its work.

IGNITION COILS.—Automobile ignition coil work is made a specialty by the Autocoil Co., of 132 Seventh street, Jersey City, N. J., which announces that it has been awarded the contract for supplying ignition coils for all the 1906 Pierce cars. Purchasers of "Autocoils" may take their choice of vibrators before buying, and if, after buying, they wish to change to a different vibrator, they can do so without touching the wiring. Given the type, size, power, compression, speed and other details of an engine, the Autocoil Co. will supply a coil that will give the best possible results under the conditions.

GEAR CUTTING.—Gears are used in some form in every automobile, and much depends on their strength and accuracy. Good gears, cut to the proper form, run with a minimum of friction and wear. A concern that makes a specialty of gear work is the R. D. Nuttall Co., of Pittsburg, Pa., which operates more than 100 gear-cutting machines of various types and nearly 300 other machine tools. As a matter of general interest, it may be said that gears can be cut by this concern up to thirty feet in diameter, with sixty-inch width of face. A booklet recently issued by the Nuttall Co. illustrates a number of the products of the factory, and also gives several pictures of the plant itself.

MONOGRAM OILS.—The Columbia Lubricants Co., of 78 Broad street, New York, states that sixteen of the nineteen competitors in the Vanderbilt cup race used Monogram oils, including American, French, Italian and German cars; also, that one of the French drivers was so well pleased with the results obtained from the use of Monogram oils that he made arrangements for their introduction in France.

WHITNEY CHAIN TOOL.—In order to make the repairing of Whitney chains as simple as possible the manufacturers, the Whitney Mfg. Co., of Hartford, Conn., have

brought out a tool for separating the side blocks from the rivets, so that a new link or a new piece of chain may be inserted at any point. There is a connecting link or "master link" in every Whitney chain, and this may easily be removed by hand; but the other links are fitted so tightly to the rivets that when removed with the assistance of a hammer the rivets are sometimes

cracked, being well hardened to resist wear. The tool illustrated herewith is designed to remove the links without trouble. With this tool and a few extra links and cotter pins in the tool box of the car, a broken Whitney chain can be repaired on the road without difficulty, and with very little loss of time. The handle of the tool is detachable, and the whole folds up into a small space for stowage.

TRADE PUBLICATIONS RECEIVED.

UNEEDME TOOL CO., Columbus, O.—Booklet illustrating and describing the Uneedme tire applying and removing tools.

AMERICAN SHOCK ABSORBER CO., Easton, Pa.—Circular describing the American shock absorber manufactured by this concern.

COMMERCIAL AUTOMOBILE CO., 1336 Mich-

igan avenue, Chicago.—Illustrated circular describing Synnesvedt electric delivery wagons.

THE SHAWVER CO., Springfield, O.—Circular regarding the Springfield automobile jack.

THE GRAHAM CO., New York City.—Catalogue of supplementary springs and spring bumpers for automobiles.

CHARLES H. FIELD, Providence, R. I.—Circular illustrating and describing a special form of grinding and polishing machine.

REUBEN ALLERTON, 78 Broad street, New York.—Circular regarding Allerton's automobile and gas engine oils, called the "O-T-O" lubricants.

MOTZ CLINCHER TIRE & RUBBER CO., Akron, O.—Circular illustrating and describing the Motz solid rubber clincher tires for pleasure vehicles and trucks.

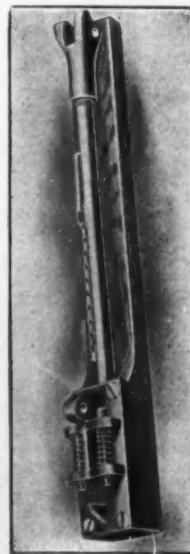
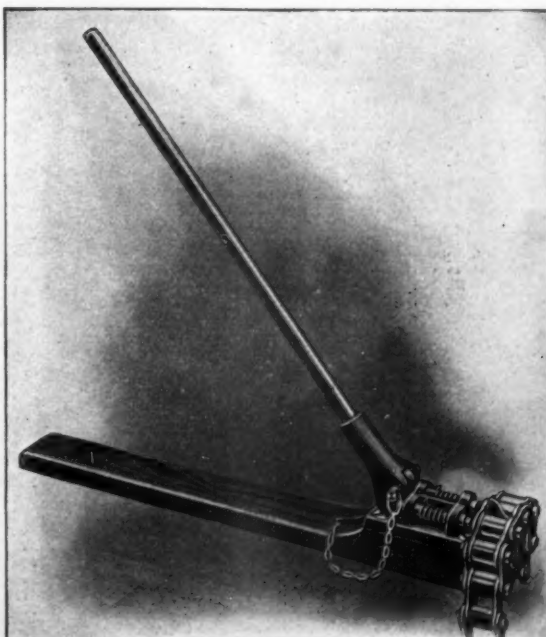
J. STEVENS ARMS & TOOL CO., Chicopee Falls, Mass.—Booklet containing letters from owners of Stevens-Duryea automobiles, expressing their satisfaction with the machines.

BREEZE MOTOR MFG. CO., 33 Court street, Newark, N. J.—Circulars illustrating the Breeze automatic carburetor and giving information of a useful character regarding carburetors generally.

FAIRMOUNT ENGINEERING WORKS, 3211 Spring Garden street, Philadelphia.—Catalogue of Chadwick gasoline automobiles of 24-30 horsepower and 40-45 horsepower; also separate automobile and marine motors and special parts.

B. F. BARNES CO., Rockford, Ill.—Catalogue of Twentieth Century machine tools, including power drills of all kinds—bench drills, sensitive drills, gang drills and horizontal drilling and tapping machines—also drill chucks, drill grinders, foot lathes, tools and accessories.

HOEFER MFG. CO., Freeport, Ill.—Catalogue of drill presses of various types, power metal saws, horizontal drilling and boring machines, vertical boring machines, wire straighteners and furniture spring making machinery. This concern also designs and builds special machinery to order.



WHITNEY CHAIN TOOL, OPEN AND CLOSED.

INDEX TO ADVERTISERS

Acetylene Gas Illuminating Co.	43	Harris Oil Co., A. W.	44	Royal Motor Car Co.	79
Adwear Tire Sleeve Works	43	Hart, Wm. R.	46	Rubay, Leon	43
Am. Anti-Puncture Tire & Auto Co.	51	Hartford Rubber Works	73	Rushmore Dynamo Works	56
American Ball Bearing Co.	58	Hatcher Auto-Parts Co.	51	Saks & Co.	39
American Coil Co.	42	Havemeyer Oil Co.	42	Sampson Leather Tire Co.	78
American Darracq Automobile Co.	90	Haynes Automobile Co.	62	Scott-Muffler Co.	67
American Machine Mfg. Co.	41	Heine Electric Co.	58	Scoville & Peck Co.	67
American Veneer Co.	50	Heller, Joseph S.	52	Seidler-Miner Electric Co.	44
Anderson & Sons Co.	46	Herz & Co.	52	Shaw, Ora D.	42
Atwood Mfg. Co.	51	Hoffman, Geo. W.	43	Shawver Co.	42
Auto Brass & Aluminum Co.	46	Holly Bros. Co.	42	Shelby Steel Tube Co.	53
Auto Front Drive Mfg. Co.	58	Hopson & Chapin Mfg. Co., The	46	Skinner & Skinner	53
Auto Rebuilding Co.	77	Hussey Drop Forge & Mfg. Co.	59	Smith Co., A. O.	54
Auto Top Mfg. Co.	45	Hyatt Roller Bearing Co.	58	Smith & Mabley	95
Automobile Equipment Co.	43	Ideal Carriage Washer Co.	77	Snow, N. H.	45
Automobile Supply Co.	44	Illinois Central Railroad	77	Speed Changing Pulley Co.	64
A-Z Co., The	46	Imperial Brass Mfg. Co.	53	Speed Indicator Co.	54
Baker Motor Vehicle Co.	82	Imperial Wheel Co.	59	Spicer Universal Joint Mfg. Co.	44
Baldwin Chain Mfg. Co.	46	Jackson Automobile Co.	77	Splitdorf, C. F.	44
Bay State Stamping Co.	42	Janney, Steinmetz & Co.	46	Sprague Umbrella Co.	84
Bemis, T. Alton	55	Jeffrey & Co., Thomas B.	94	Springfield Auto Top & Upholstering Co.	45
Bilas-Chester Co.	43	Jersey Brake Co.	54	Springfield Metal Body Co.	45
Blomstrom Motor Co., C. H.	85	Jones & Burt	71	Springfield Moulding Works	42
Boston Auto Gauge Co.	64	Kells Mfg. Co., W. J.	46	St. Louis Motor Carriage Co.	78
Boston Automobile Exchange	43	Kirkham Motor Mfg. Co.	47	Standard Roller Bearing Co.	43
Boston Cycle & Sundry Co.	44	Knox Automobile Co.	84	Standard Connecting Rod Co.	61
Bowker & Co., H.	50	Lafayette Hotel	65	Steel Ball Co.	48
Bowman & Morrison	47	Leather Tire Goods Co.	71	Stevens Arms & Tool Co.	83
Bowser & Co., S. F.	44	Lee Mfg. Co.	57	Stimpson, Edwin B.	54
Brennan Motor Co.	48	Light Mfg. & Foundry Co.	52	Stolp Mfg. Co.	60
Brewster, Nestor H.	51	Lipman, Carl E. L.	42	Streit Machine Co., A.	48
Briscoe Mfg. Co.	47	Lobe Pump Co.	47	Sunbury Mfg. Co.	71
Brown Mfg. Co., J. C.	71	Locke & Co.	58	Supplementary Spiral Spring Co.	51
Buckeye Mfg. Co.	78	Locomobile Co. of America, The.	80	Swinhart Clincher Tire & Rubber Co.	71
Buckeye Wheel Co.	54	Logan Construction Co.	79	Syracuse Aluminum & Bronze Co.	46
Bullard Automatic Wrench Co.	Cover	London Auto Supply Co.	45	Tennant Auto Tire Co.	52
Bullock Igniter Co.	42	Lustre Chemical Co.	60	Thomas Motor Co., E. R.	91
Byrne-Kingston Co.	68	Madison-Kipp Lubricator Co.	47	Timken Roller Bearing Axle Co.	63
Cadillac Automobile Co.	85	Manhattan Automobile School	50	Trebert Auto & Marine Motor Co.	48
Camp Cycle Co.	60	Manhattan Storage Co.	66	Trebert Gas Engine Co.	48
Canedy, Earl	44	Manning Mfg. Co.	43	Tritt Electric Co.	54
Carbondale Chemical Co.	43	Manufacturers' Motor Car Co.	55	Tucker, C. F.	42
Carr, F. S.	42	Mathewson Motor Car Co.	80	U. S. Emergency Case Co.	56
Central Body Co.	44	Maxwell-Briscoe Motor Co.	Cover	Ultra Pump & Power Co.	42
Chandlee & Chandlee	47	McCord Mfg. Co.	61	Uncas Specialty Co.	54
Chelsea Clock Co.	42	Michelin Tire	72	Unedme Tool Co.	58
Cleveland Oil Soap Co.	60	Middletown Auto Body Co.	45	Upton Machine Co., The	43
Cleveland-Canton Spring Co.	55	Miller, Charles E.	64	Upton Motor Co.	48
Collins & Sons, G. A.	45	Milwaukee Steel Foundry Co.	46	Veeder Mfg. Co.	51
Connecticut Tel. and Electric Co.	42	Moline Automobile Co.	84	Vehicle Specialty Co.	78
Consolidated Mfg. Co.	87	Monarch Automobile Co.	84	Victoria Hotel	65
Continental Caoutchouc Co.	75	More, Power Co.	42	Voigt, Em.	78
Continental Motor Mfg. Co.	48	Morgan, B.	43	Walker Co., E. C.	43
Corbin Motor Vehicle Corporation	90	Morgan & Wright	75	Walworth Mfg. Co.	39
Corwin Mfg. Co.	Cover	Mosler & Co., A. R.	50	Warner Instrument Co.	61
Covert Mfg. Co.	46	Moss Photo-Engraving Co.	67	Way Muffler Co.	49
Crawford Automobile Co.	80	Motor Car Equipment Co.	59	Wayne Automobile Co.	78
Crucible Steel Casting Co.	46	Motor Car Specialty Co.	52	Webster Mfg. Co.	62
Cullman Wheel Co.	46	Motor Car Supply Co.	43	Weed Chain Tire Grip Co.	69
Daimler Mfg. Co.	88	Murdock, Jr., Co., James	42	Welch Motor Car Co.	78
Dayton Electrical Mfg. Co.	55	Myers-Dayton Top Co.	45	Western Tool Works	79
Davis Mfg. Co.	68	National Car Wheel Co.	46	Weston Electrical Instrument Co.	47
Devine Specialty Co.	79	National Carbon Co.	53	Wheeler, F. H.	70
Diamond Chain & Mfg. Co.	58	National India Rubber Co.	56	White Sewing Machine Co.	81
Diamond Rubber Co.	74	National Motor Vehicle Co.	82	Whitlock Coil Pipe Co., The	63
Dietz, R. E.	66	National Oil Heating Co.	43	Whitney Mfg. Co.	47
Dixon Crucible Co., Joseph	61	Neustadt Auto Supply Co.	54	Williams, E. Q.	48
Draper Bros. Co.	44	Never Miss Spark Plug Co.	55	Wilson Auto Clock Co.	50
Duff Mfg. Co.	42	New York Gear Works	52	Winkley Co.	55
Dusenbury, Louis	62	New York School Auto Engineers	50	Winton Motor Carriage Co.	Cover
Dyke Auto Supply Co., A. L.	51	New York Telephone Co.	60	Witherbee Igniter Co.	47
E. H. V. Co., The	88	New York & New Jersey Lubricant Co.	45	Wolverine Auto and Com. Vehicle Co.	86
Edipse Buggy Co.	45	Newmastic Tire Co.	50	Wrav Pump & Register Co.	53
Edmunds & Jones Mfg. Co.	57	Nicholsberg Mfg. Co., H.	58		
Edridge Electric Mfg. Co.	64	Nordyke & Marmon Co.	82		
Edredge Electric Mfg. Co.	42	Nuttall Co., R. D.	46		
Electric Storage Battery Co.	55	Oakes & Dow	44		
Electric Vehicle Co.	80	Ofeldt & Sons	43		
Elmore Mfg. Co.	83	Orswell Ignition Co.	60		
Erie Railroad	58	Pacific Tucking & Mfg. Co.	61		
Erie Stamping and Mfg. Co.	41	Packard Electric Co.	43		
Excelsior Supply Co.	42	Packard Motor Car Co.	96		
Fairmount Engineering Works	42	Parish & Bingham Co.	57		
Fast, Otto	47	Parker Lock Switch Co.	43		
Firestone Tire and Rubber Co.	Cover	Pedersen, J. T.	47		
Ford Motor Co.	86	Peerless Motor Car Co.	93		
Ford & Dennen	42	Pennsylvania Rubber Co.	72		
Franklin Portable Crane & Hoist Co.	55	Philadelphia Ornamental Wire Co.	53		
Franklin Mfg. Co., H. H.	39	Pioneer Brass Works	46		
Frost, F. E.	61	Pittsburg Reduction Co.	46		
G. & J. Tire Co.	73	Pneumatic Tire Protector Co.	71		
Gabriel Horn and Mfg. Co.	60	Pope Mfg. Co.	23		
Gardford Co., The	59	Powell Mfg. Co.	56		
Garrick Auto Prop Co.	51	Prest-O-Lite Co.	67		
Gibbs-Brower Co.	54	R. & C. Indicator Co.	54		
Gilbert Mfg. Co.	43	Rajah Auto Supply Co.	52		
Goodrich Co., B. F.	70	Railway Appliances Co.	42		
Goodyear Tire & Rubber Co.	74	Raines & Co.	77		
Grand Hotel, The New	65	Rainier Co., The	92		
Gray & Davis	Cover	Reeves Pulley Co.	62		
Ham Mfg. Co.	67	Rensburg Mfg. Co., E. E.	56		
Hardy Co., The R. E.	44	Reo Motor Car Co.	77		
		Republic Rubber Tire & Shoe Co.	43		
		Riverside Body Factory	45		
		Rochester Die Shaper Co.	17		
		Rochester Optical Co.	67		
		Rose Mfg. Co.	47		
		Royal Equipment Co.	42		

SPECIAL NOTICES

Advertisements inserted under this heading at 20 cents per line; about 7 words make a line. Remittance should accompany copy. Replies forwarded if postage is furnished.

AUTO WANTED—Have an old plantation, Scott County, Tenn.; will trade for automobile of standard make. Address, Box 531, St. Ansgar, Iowa. Nov 8

CHAUFFEUR, technically educated and experienced young man in building and repairing automobiles, desires position as chauffeur; careful and a licensed driver, and one who upholds his employer's interest. Please address, C. E. Hildreth, Westford, Mass., P. O. Box 44. Oct 26

FOR SALE—Packard, Model N, canopy top; price \$3,000. Terre Haute Auto Co., Terre Haute, Ind. Nov 8

FOR SALE—15-tube radiator, \$10, other sizes dirt cheap. Symonds, 901 N. Fairfield Ave., Chicago, Ill. t.

FOR SALE—Four-cylinder Autocar in excellent condition; fully equipped. R. J. Knox, 105 Broadway, Brooklyn. Oct 26